



Magazine

JULY 1961

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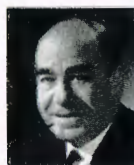
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The ICI Magazine

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Contributors



Mr. E. A. Bingen, who became a deputy chairman in July 1959, was appointed to the ICI Board eight years earlier as Overseas Director. He went up to Oxford in 1919 after two years' service in the first world war. Having taken an honours degree in Law, he qualified as a solicitor in 1924. He joined ICI's Legal Department three years later.



Mr. W. S. Bristowe was appointed Head of the Central Staff Department in 1948. Before that he was Head of the Far East Department. His previous contributions to the Magazine, covering such diverse subjects as athletics, spider superstitions, giants and Sherlock Holmes, indicate his wide range of interests.



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Mr. A. R. Dymant, author of "Bradshaw's Railway Timetable," is a research assistant to the Curator of Historical Relics, British Transport Commission. Before that he was employed by British Railways in the Continental Manager's Department and the Operating Superintendent's Office at Stratford. His career with the railways started in 1921, when he began work in the Secretary's Office of the Great Northern Railway. He later worked for the London and North Eastern Railway. During the first world war he was awarded the Croix de Guerre.

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FRONT COVER: St. Basil's Cathedral, Moscow.
Photo by H. M. P. Lorenz (Paints Division)



POINT of VIEW

A MOTORISED BRITAIN

By Mark Abrams

OVER the past two or three years it has become very fashionable for economists to forecast industrial developments and consumer behaviour over the next few years. Recently I found myself in the North of England addressing a conference of businessmen on the future of the British car industry.

INDICATED that over the ten years 1960-70, even on the most cautious estimates, it is possible that the number of private cars in Great Britain will almost double—from 5½ million to 10 million; and that while today one-third of all adults live in households with a car, by the end of this decade the proportion could easily be 50-60%. These forecasts were based largely on one simple assumption—that what had happened in the recent past could go on happening in the near future. The assumption and the calculations seemed reasonable to everyone, but not until a day or two later did I appreciate fully one personal element in this episode: I had made the whole of the trip, from door to door, by public transport and had left my car at home parked in a public garage.

That piece of behaviour pinpoints the weakness in the forecasts. Nowadays all motorists some of the time, and some motorists nearly all the time, feel that having a private car no longer

makes sense. Today the average family with a car spends roughly £200 a year on motoring (buying cars and running them), and in return for this finds itself faced with fewer and fewer opportunities to use its car economically and pleasurably. The source of their frustration is indicated by the latest international figures on roads and cars. In 1958 the number of vehicles (excluding motor cycles) per mile of road in Great Britain, at 31 cars per mile, was greater than in any other country in the world. Today our density figure is up to nearly 40 cars for each mile of road in Great Britain. Clearly, the forecast that the number of cars will double over the next decade is nonsense unless one also assumes that something very drastic is going to be done about roads.

AND that means spending a great deal on roads. Rural roads have to be widened and straightened out, by-passes built, inner relief roads constructed, much greater provision made for off-street parking, and new motorways built across the country. At present (year ending March 1961) the Government and all local authorities between them are spending about £200 million a year on roads. It is the opinion of most experts that over the next ten years this expenditure (if we are to have efficient roads) should

amount to approximately £3500 million. Only if something like this sum of money is provided will we have by 1970 a country fit for motorists to live in. It will be a different country from what we now know. For example, a majority of families will have a car and many will have two. Spending money on roads will be a major charge on the Government's budget.

INSTEAD of nearly half the population being concentrated in a dozen great urban sprawls we might have one almost unbroken suburb extending from Kent through the Home Counties and the Midlands into Lancashire and Yorkshire. More attractively, taxing the motorist will be one of the main sources of Government revenue. He already provides the Chancellor of the Exchequer with more than 10% of all the money he needs for defence, the social services, food subsidies and interest on the National Debt. With a really efficient road system for motorists the Chancellor should by 1970 be able to rely on motor taxation to cover at least 20% of these costs and still have enough left over for the maintenance of all roadways. If we were in that position now the Chancellor could contemplate abolishing all tax on incomes below £1000 a year. That is one way of measuring the cost of the post-war neglect of our roads.

The opinions expressed in this article are not necessarily those of the Company

NEW LOOK AT THE TOP

By the Editor

The top direction of ICI recently came in for a thorough overhaul, and some interesting changes were made. Here one of the two deputy chairmen presents a quiz on how a team of men sets about the job of directing a group whose turnover last year exceeded £558,000,000 and whose capital development has av-

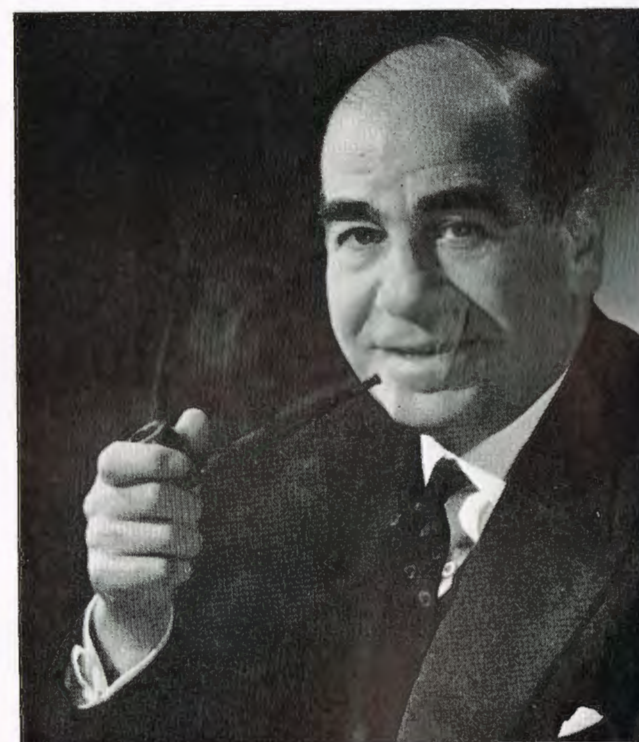
eraged over £45,000,000 a year in the last ten years.

ONE floor below the top at Imperial Chemical House there is more than a subtle change of atmosphere. Corridors are carpeted, rooms are bigger, voices are perhaps a shade more hushed; and there is a very definite aroma of cigars. I hardly need tell a reader that here work the directors of ICI. Recently the organisation of the Company at top level came in for a few changes. I went up to this sixth floor to talk with a deputy chairman, Mr. Eric Bingen, and to find out just what these changes amount to and just how 24 men set about their job of running not the largest chemical company in the world (the American Company, E.I. du Pont de Nemours & Co., is substantially bigger) but none the less one big enough to be classed as a world-wide giant. The conversation went like this.

EDITOR: *For a long time I have been fascinated by the question: how do the people at the top avoid finding themselves at one or other of two extremes—either being immersed in so much paper and detail that they do not know which way to turn; or being insufficiently familiar with very complex and highly technical problems, so that they cannot really do much more than rubber stamp recommendations from below. Obviously sound organisation at the top is vital for sound higher direction. Have you merely made the top level organisation look better as a neat organisational blueprint in the hope that things will creak less, or has there been some fundamental rethinking with no preconceived ideas?*

BINGEN: I would say we have had a completely new look at our organisation, although the changes which have emerged may not seem to you all that funda-

mental. This arose from a directive—incidentally a verbal one—by the Chairman not long after he took office. He asked Ron Holroyd and myself to look at ICI's top-level organisation with a completely fresh eye, put everything into the melting pot, analyse and criticise it, sound out other people's opinions, and then, if we thought anything warranted changing, to come up with a plan for improvements. Our work was, of course, followed up by the Chairman, who



Mr. E. A. Bingen, a deputy chairman of ICI

introduced some new ideas of his own. After a good deal of thought and discussion it was finally accepted by the Board and forms the basis of the new organisation. From start to finish this work took about nine months.

EDITOR: *Was there really any great need for a reappraisal of our organisation?*

BINGEN: I certainly think so. After all, we had been working under an organisation which had been evolved in 1943 in the middle of the war, and had been substantially unchanged since then. You must bear in mind that our exports and our overseas interests have both grown enormously since the war and that some of the fastest-growing Divisions—Heavy Organics, Plastics and Fibres—either did not exist until after the war or were pretty small in relation to the more traditional parts of ICI's business. Clearly, an organisation which was sound enough nearly 20 years ago was not necessarily the ideal in present-day conditions. There was one thing we certainly tried to avoid, and that was merely making changes for the sake of changes or to have a neat organisational blueprint.

EDITOR: *I see. Can you tell me, then, something about your objectives?*

BINGEN: Our main idea, apart from considering what the size of the Board should be, was to work out a

plan under which the Board would confine itself to essentials and would have proper paper presented to them to enable them to reach the right decisions; to ensure that there was proper delegation throughout ICI and that more authority was given down the line; and to see that there was close co-operation between the Divisions, with sufficient time for Divisional managements to do some looking into the future. After all, you cannot expect the Board of ICI to sit with wet towels round their heads and come up with

THE DIVISION OF RESPONSIBILITIES BETWEEN ICI EXECUTIVE DIRECTORS

CHAIRMAN:
S. P. Chambers

3 DEPUTY CHAIRMEN:
R. Holroyd — E. A. Bingen — L. H. Williams

8 FUNCTIONAL DIRECTORS:

| | |
|--------------------------------|------------------|
| COMMERCIAL: | W. D. Scott |
| FINANCE: | P. T. Menzies |
| OVERSEAS: | |
| WESTERN HEMISPHERE AND AFRICA: | R. C. Todhunter |
| WESTERN EUROPE | A. Coress |
| OTHER COUNTRIES | M. J. S. Clapham |
| PERSONNEL: | C. M. Wright |
| RESEARCH AND DEVELOPMENT: | J. Ferguson |
| TECHNICAL: | H. Smith |

5 GROUP DIRECTORS:

| | |
|-----------------------------------|-----------------|
| GROUP A: | J. S. Gourlay |
| ALKALI DIVISION | |
| GENERAL CHEMICALS DIVISION | |
| GROUP B: | G. K. Hampshire |
| DYESTUFFS DIVISION | |
| PAINTS DIVISION | |
| PHARMACEUTICALS DIVISION | |
| GROUP C: | C. Paine |
| FIBRES DIVISION | |
| HEAVY ORGANIC CHEMICALS DIVISION | |
| PLASTICS DIVISION | |
| GROUP D: | R. A. Banks |
| BILLINGHAM DIVISION | |
| NOBEL DIVISION | |
| WILTON WORKS AND SEVERNSIDE WORKS | |
| GROUP E: | J. Taylor |
| METALS DIVISION | |

brilliant ideas. They must indeed shape policy and give directives; but to enable them to do that there must continually be a proper flow of information given to them.

EDITOR: *That sounds interesting; but what were the chief points in your reappraisal?*

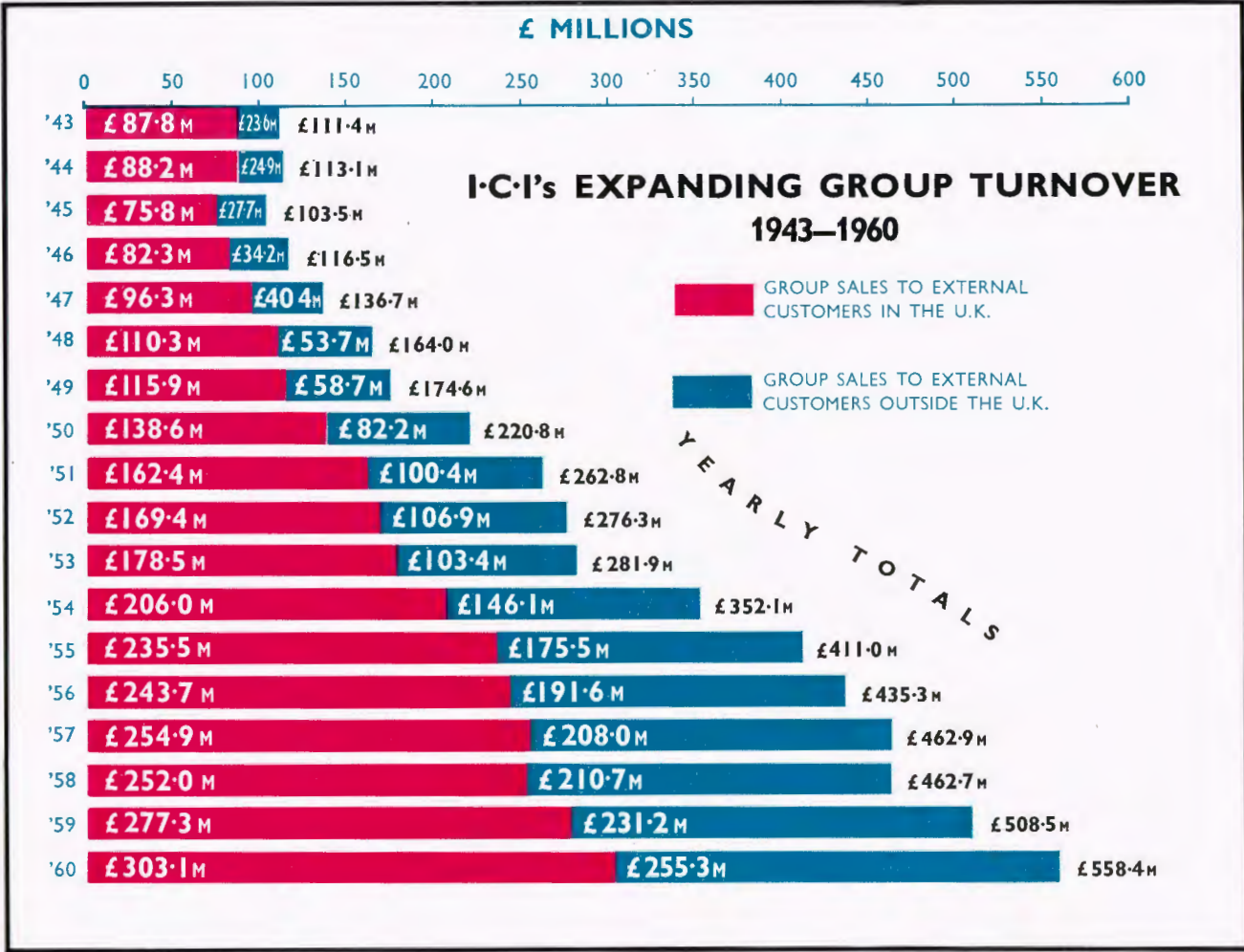
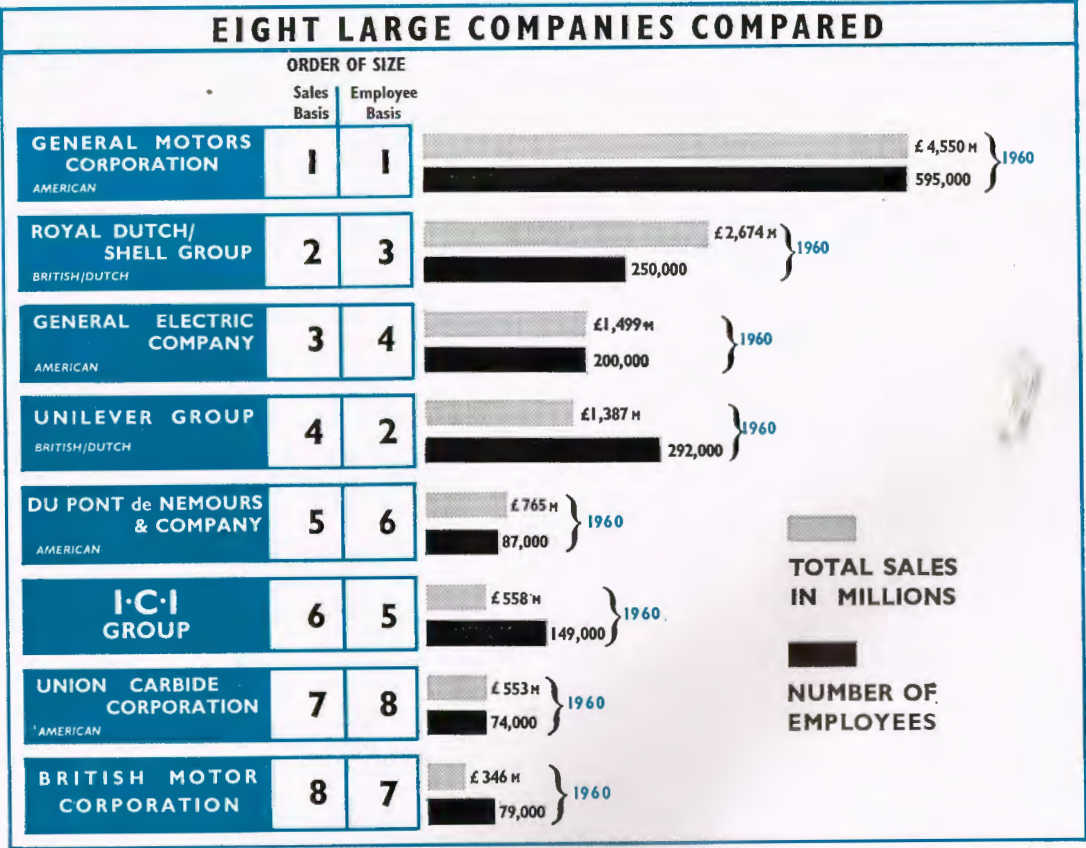
BINGEN: Essentially, we found that our existing organisation which, as I have said, dates back to 1943, was still on basically right lines. There was agreement all round that it was right to give the Divisions virtually free autonomy within the framework of financial and higher policy control from the centre. There was agreement, too, that non-executive directors from outside the Company, who are not so inbred as we are and have had wide experience of industrial or political life outside ICI, should hold about one-quarter of the seats on the Board. Next we combed through the list of offices held by executive directors and tried hard to see if we could make any cuts.

We have, you know, read Parkinson's law; and the risk of proliferation, with the difficulties of making decisions in big bodies, is always there. However, we found little scope, because here again all were agreed

that our present system of functional directors—that is to say, directors responsible for functions like finance, research and development, personnel and commerce—must be preserved alongside the line management directors—that is to say, directors directly responsible for the affairs of a group of Divisions. We tried to see what we could do by means of regrouping, and in the end we were able to reduce the number of executive portfolios by two, so that we now have seventeen full-time executive directors (including the Chairman and three deputy chairmen) plus seven non-executive directors, among whom I include Peter Allen, at present President of Canadian Industries Ltd., making a total of twenty-four on the Board.

EDITOR: *Can you give a brief sketch of the regrouping?*

BINGEN: First of all, on the functional side we put research and development together as one responsibility and we abolished economic planning as a specialist job, since it concerns us all, thus saving two seats on the Board. On the other hand, there are now three overseas directors instead of two—an inevitable result of the increased size of our investments and our export business. The job was too big for two; it



meant too much travelling, and even the hardest constitution could not stand the strain. Then again, the growing importance which we attach to manufacture in the Common Market, highlighted by the formation of the European Council, pointed to the need of a director who would concentrate on our interests in the Six and the Seven. Now, roughly speaking, one director looks east, another looks west, and one looks after Europe. There was thus a net saving of one functional director.

Secondly, we regrouped the Divisions, with the idea of bringing those with common interests closer together and, incidentally, reduced the number of group directors by one. As you know, we now have a Heavy Organic Group, comprising HOC, Fibres and Plastics; a Light Organic Group, comprising Dye-stuffs, Paints and Pharmaceuticals; an Agricultural and Explosives Group, embracing the Billingham and Nobel Divisions; a Group embracing the traditional basic chemicals, comprising the Alkali and General

Chemicals Divisions; and Metals and our associated interests in the metals business as a Group on their own.

EDITOR: *That certainly seems a bit more streamlined, but surely basically no more than what the politicians call a reshuffle?*

BINGEN: I think you are wrong there. This grouping of Divisions, though not perfect product-wise, has enabled us to introduce a new system of Group Committees. Each Group has certain common interests; and it is planned to place more emphasis on the community of these interests by arranging for the group director to hold a quarterly conference attended by his functional director colleagues and the chairman and managing directors of the Divisions in the Group. At this conference, problems of long-term planning and development can be looked at from a rather broader point of view than one Division alone can do. Another advantage is that this system will put group directors in closer touch with Divisional

thinking at the stage before decisions are taken. We know, of course, that some problems run across Group frontiers, and we have legislated for that by providing for inter-Group committees where necessary.

EDITOR: *Doesn't this Group Committee scheme impose another layer between Divisions and the Board?*

BINGEN: Not really.

This is a piece of consultative machinery with no executive powers, but it lays emphasis on the theme really running through all the recent changes: the lifting of senior executives out of immersion in day-to-day problems—in other words, more emphasis on making time for forward thinking and planning.

EDITOR: *These are fine words, but they do seem a little like the glib phrases of a politician.*

BINGEN: You do us an injustice. Let me elaborate another development—the new system of Divisional conferences, presided over by Leslie Williams. Now, there is one very convenient even if partly fortuitous fact about our organisation. It is that the Divisions number eleven and that, omitting one month when many people are on holiday, there are eleven months in the year available for conferences. This coincidence of figures fits neatly into an arrangement for a monthly conference at which a really far-reaching forward look is taken at the affairs of each Division. So that in fact once a month Leslie Williams is getting down to the job of presiding over a conference that really looks into the affairs of a particular section of ICI.

What happens is this. First of all, the Division will prepare a paper setting out a statistical and informative picture of its affairs and winding up with a statement of the capital commitments it wishes to enter

into over the next twelve months. This will often run into many millions of pounds. The chairman and other directors of the Division are present at this conference. The meeting will perhaps open with the Division chairman highlighting the main points in the paper he has submitted, and then a general discussion

on the Division's forward programme will ensue. All ICI directors have the right to attend these Divisional conferences, including the non-executive directors. Judging by present experience, all of them will come if they can. What takes place is not an ogpu. It is not so much an inquest into the Division's past handling of its affairs as a look into the future. If the conference endorses in principle a Division's capital programme—it can of course send it back for another think—the programme goes in the form of a budget to the Board for approval.

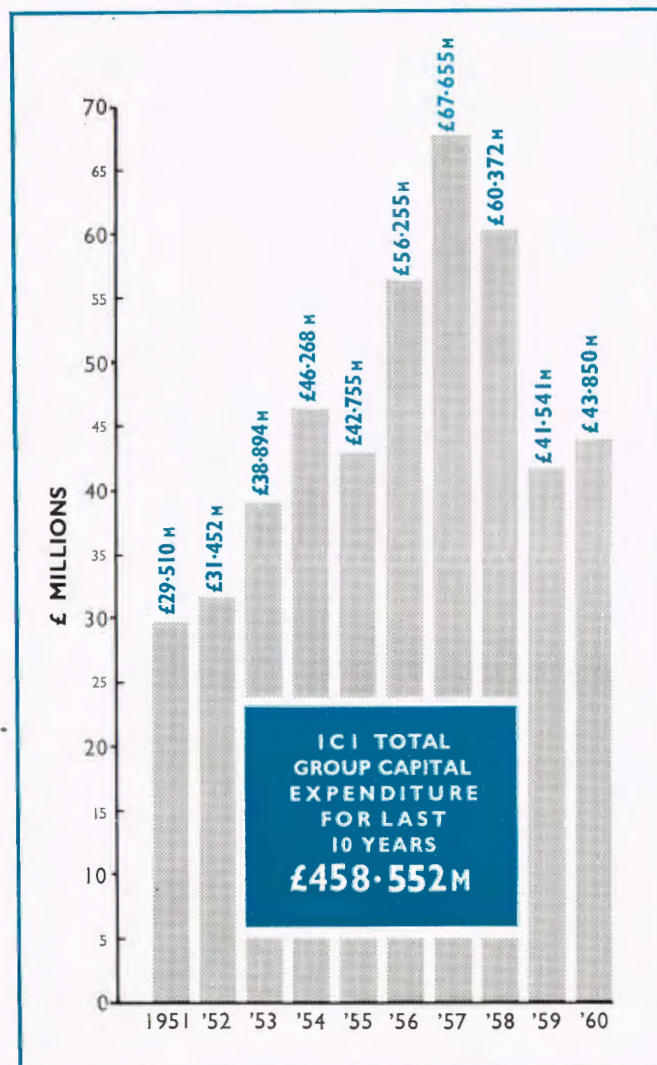
EDITOR: *How long would such a conference last?*

BINGEN: I suppose on an average 2½ hours—say a morning.

EDITOR: *This seems an incredibly short time for a thorough examination.*

BINGEN: You must look at the big picture. A conference at Board level is not going to go into details. It is there to weigh up the really big factors. Are we putting too much effort into such and such a field? Are we keeping in the forefront, or are we missing opportunities? Is ICI keeping its affairs in balance? Are the political repercussions all right? And so on. EDITOR: *You have told me about the growth of ICI's overseas investments; how do you deal with overseas affairs?*

BINGEN: Here we have eleven overseas conferences presided over by myself, and fortunately we have no



difficulty for this purpose in dividing the world into eleven self-contained areas. We ask the heads of our overseas companies and other leading executives to come over for these round-table conferences and, broadly, the procedure here is the same as that for Divisional conferences. There is, however, one significant difference: in some of our major overseas companies we have outside shareholders and in all of them we have effective local boards, so we do not approve capital expenditures in the same way as those at home. While we keep a close watch on them, generally we indicate whether we support their plans or not, instead of sanctioning them.

EDITOR: *These conferences seem to me almost a board meeting under another name. After all, the same Directors are present at both. Wouldn't one rather longer board meeting do the job?*

BINGEN: I think you miss the real point of this conference approach. First of all, you are not right in assuming that the same people are present at both. At the conferences, Divisional or overseas, the Chairman of ICI is not present but the chairmen of the Divisions and their managing directors in one case, and the overseas heads in the other, are present. And vice versa at board meetings. One meeting considers, the other decides. It is right to have a split in time between these two approaches, even though they overlap. These are very important decisions involving millions of pounds. It is right that we should have two thinks, so to speak, and particularly two thinks with a time interval. The conference is really the opportunity for directors to brief themselves on the problem; and the board meeting is the time when they decide. Moreover, there is another advantage in the conference system. It disciplines Divisions and overseas companies to present a coherent statement of their forward planning and thinking and then argue the case and answer questions. This couldn't be done at a Board meeting.

Role of CPC

EDITOR: *Let us now assume that a Division's budget is approved by the Board. What then?*

BINGEN: Here again we have an example of two looks at a problem. As the year goes on, the Division will work out detailed projects within the framework of the agreed budget. These, if beyond the financial authority of the Division, will be submitted in the form of expenditure proposals to the Capital Pro-

gramme Committee, consisting of all the executive directors, for detailed examination. The proposals will show such things as estimated return on capital, the phasing of the expenditure, the amount needed for development, the cost and length of the break-in period, and the estimated break-even point. All these matters are examined technically and commercially in detail by the CPC.

A basic merit of this procedure is that Divisions have to argue their case for spending very thoroughly indeed before a bunch of people who are equipped to ask pertinent and penetrating questions. Expenditure proposals for up to £1m. can be approved by the CPC; proposals for more, if accepted by the CPC, go to the Board for final approval. Here the non-executive directors, now more familiar with the problems as a result of the conference system, have their say and give their advice in the light of background experience not possible for people who have spent their working lives within the Company.

Overseas Control

EDITOR: *Do you follow the same procedure with overseas companies' budgets?*

BINGEN: Not entirely, for the reasons I have already given. But the underlying concept is still the same, and our procedure does give the ICI Board an opportunity of considering and expressing its views on major expenditure overseas. Sometimes, however, ICI directors, sitting in their capacity as directors of overseas companies, have to take decisions on the spot. EDITOR: *How do you deal with the problem of "communication" in ICI? With its growing size it must be difficult to see that information is not held up here and there and goes where it should.*

BINGEN: This is a difficult problem, I admit, but we have gone a long way to meeting it. All papers submitted to these Divisional and overseas conferences and to the group committees, and the minutes of these meetings, go to all Division chairmen and managing directors, and they are supposed to follow up points of interest with each other. Certainly they could not claim that they do not know what is going on.

EDITOR: *Are there any other conferences or Board committees which have standing meetings?*

BINGEN: Yes; but we keep them to a minimum. There is a Chairman's conference once a month, at which all directors can attend; but this is reserved for really major matters which may crop up outside the

(Continued on page 237)

A MILLION RUSSIANS SEE ICI EXHIBITION

By Dennis P. Carey

Even 80 tons of ICI give-away literature did not satisfy the Russian thirst for information at the recent Moscow Trade Fair. There had to be a daily ration of ICI pamphlets—gone in a few minutes. Of all our products, 'Terylene' excited the greatest interest.

"It takes just about 90 seconds to get through a packet of 100" said Mr. Tuffrey, the ICI sergeant on duty. He was not referring to British cigarettes or to sweets for the kiddies, but to a packet of ICI information leaflets which he had just distributed to a milling, jostling crowd of cheerful Muscovites on the first day of the British Trade Fair at Moscow.

This gives an idea of the interest shown by the Russians in what must have been one of the best-attended and most successful trade fairs ever staged by British enterprise. Throughout the two weeks' duration of the Fair a surging crowd of Soviet citizens packed the four pavilions and the fairground in Moscow's Sokolniki Park of Rest and Culture. There they saw the exhibits of 624 British firms, a prestige display put on by the Government to show Britain's up-to-date technological achievements, and by no means least of all some 2000 British businessmen and helpers—including the pipe band of the Argyll and Sutherland Highlanders.

Moscow is now a very large city—some say over 7 million people—and nearly every Muscovite would have come to the Fair given the chance; but it was impossible to squeeze in more than a limited number, and besides, not only Muscovites but many people from all parts of the USSR had come to the Fair. Every second person I met asked "How can I get a ticket? Have you got a spare?" As it was, by cramming in the crowds to bursting point from 9 a.m. to 9 p.m., 1½ million people were able to see it in a fortnight.

The Fair got off to a bustling start with an energetic visit by Mr. Khrushchev himself. Thereafter the interest shown was voracious and all-embracing. Everyone wanted to see everything. The crowd on the ICI stand was as tightly packed as Oxford Street at sale time, and the well-explained exhibits were read and studied by technical and non-technical people alike. At first some people were disappointed that they did not see at the Fair a complete range of what Britain made, but after the first few days it was generally realised that this was a trade fair and not an exhibition. The universal comment was "Your Fair is much better than the American or the Japanese ones." Everybody said this—taxi drivers, housewives, students

and technicians. While it should not be a cause for great satisfaction, it shows that the organisers managed correctly to serve up the right mixture of publicity about the British way of life combined with specialised exhibits for technicians and things of day-to-day interest for the general public.

Indeed, there was something for everybody. Heavy equipment and machinery in plenty ranging from an 80 ton casting, which cost £3000 to ship out, to complete laundry installations. The Russian passion for automation was catered for by a complete section taken up by the scientific instrument manufacturers. Russian children saw British toys, and Russian women were treated to a varied display of colourful British textiles at several stands, including a display of 'Terylene' clothes on the ICI stand. These latter drew constant crowds, since the vogue in the USSR is all for synthetic materials. There was also much pensive contemplation by both Russian men and women at the displays of corsetry and underwear, prominently situated in the large pavilion. The only other place where I saw faces more mystified was during the performance of the kilted pipers with their "outlandish tunes."

But women's interest in the Soviet Union does not centre entirely on clothing and the home. The increasingly large number of Soviet women technicians was much in evidence. Over half the technical staff of the chemical industry are women, so it was no surprise when an attractively dressed girl, whom one would have taken for a smart secretary or student in this country, started to quiz me one morning about the stretch properties of 'Terylene' fire hose under high temperature.

ICI's stand was well placed just inside the main door of the first pavilion in a position to attract the maximum possible number of visitors. All Divisions were represented, and the stand was the biggest yet made by ICI for any exhibition. There were two storeys, and upstairs there were, mercifully, conference rooms where numerous valuable discussions were held in relative quiet, although in a temperature often reminiscent of Calcutta; but even upstairs the gregarious Russian atmosphere seemed to reign, with a constant to and fro of visitors jamming the corridors and much sliding back of the vinyl-covered



Russians crowd part of Plastics Division's display

partitions between the rooms. From ICI's point of view this was where the main work of the Fair took place, one of the objects of our participation being to widen the circle of our contacts and to make the products we wish to sell known to the right people. This is a difficult task in a country as big as the USSR; but the Russians did their best to ensure that the right people turned up, and a special period of two hours was reserved at the beginning of each day for delegations of experts.

ICI's stand team, as can be imagined, had a tough schedule. With the long hours of talking and rushing around Moscow there were several weary and hoarse individuals by the end of the Fair, especially among the interpreters.

In terms of results it is difficult to judge how successful our participation has been, since business in the USSR

takes some time to materialise from the date of a first contact. A real assessment of the results can only be given after a period of six months has elapsed. There is little doubt that ICI's absence from this fair would have been a serious blow to the position which we have built up in this market. First indications give every hope for good results.

There is no doubt that the Russian attendance at the Fair was a demonstration of interest and curiosity on the grand scale. To British people, sated with overweight newspapers and a mass of information and reading material, it may seem incredible that ICI managed to distribute nearly 80 tons of literature and that this quantity only lasted out the whole of the Fair because it was rationed. Some firms ran out of literature on the third day.

CHAIRMAN REVIEWS HIGHLIGHTS OF PAST YEAR

At the Annual General Meeting on 18th May, Mr. S. P. Chambers, Chairman of I.C.I., reviewed the main operations of the Company in the past year. He warned that in the current year profit margins are likely to be kept down by competition both at home and overseas.

THE increase both in sales and in profits in 1960 was particularly gratifying, as the second part of the year was not an easy one for large sections of British industry, including many of our customers (said Mr. Chambers in the course of his address). Nor were conditions easy in some of our overseas markets. In such circumstances it was not surprising that the upsurge of our business in the first half of last year was not continued into the second half. Nevertheless activity remained at a high level throughout the year, and the results are a further demonstration of the great strength of the Company in its diversity of markets as well as of products.

Prices Reduced

In some ways the volume of sales was better than the figures indicate because, with the reduction in prices of some of our major products, the increase in the money figure for sales as shown in the accounts was less than the increase in the physical volume of sales. A reduction of 2% in prices may not sound large, but this is the average achieved over the whole range of our sales in this country in spite of increases in basic wage rates during the year for both craftsmen and general workers, and should be considered in the light of price increases in many other industries. The higher profits can be attributed to two main factors, the very full utilisation of our manufacturing facilities coupled, in many cases, with improved efficiency and the emergence of new products from the development stage into full commercial operation.

Exports increased to a new record, £96.6 million, which was 10% more than the figure for 1959. Here again the increase would have been substantially larger but for the reduction in prices. Great efforts were made, and continue to be made, by the Company's selling organisations in all parts of the world to capture or recapture business from foreign competitors.

Important changes are taking place in the pattern of our export trade. As you will see from page 10 of the Annual Report, the volume of our sales to the British Commonwealth appears to be rather static; in fact, the position is rather better than that because, with reduced prices, the true volume shows some increase. The same is true of our

sales to the United States of America; but our sales both to the European Economic Community and to the European Free Trade Area have risen by about 25%. Sales to the Soviet Union and other countries of Eastern Europe have gone up by no less than 60%, and we now sell to that area more than we sell to the United States of America. There is every indication that this increase in sales to Europe both East and West will continue and that these markets will give that security and resilience in our exports as a whole which would be absent if we had too great a concentration on the Commonwealth and the Americas.

The importance of our export trade not only to the Company but to the country as a whole can hardly be overstated, and it is for this reason that Directors are paying many visits not only to countries in which we are manufacturing but to those in which our main purpose is to sell the products made in Britain. During the past year I have visited a number of these countries, including the Soviet Union, Poland and Czechoslovakia, as well as countries in Western Europe, Asia, Africa, Australasia and America.

Large New Projects

We are indeed at a particularly interesting period in the Company's history. Important advances are being made on several different fronts. New plants are being erected on the site at Severnside, and much of the hard work on research and development of past years is coming to fruition and is resulting in capital expenditure on large new projects designed either to reduce the production cost of existing products or to add new products to our range.

For example, since the end of the year your Directors have sanctioned expenditure on the replacement of plants which produce synthesis gas from coke, this gas going ultimately into the manufacture of fertilizers and chemicals of many kinds, by plants using processes which start from oil. This changeover from coal to oil is in line with a world-wide trend and is not to be attributed to the high cost of coal; the particular new processes which we have worked out are technically so much more efficient that we would adopt them and abandon coal as a raw material

even if the coal cost us nothing. By using these processes we expect to reduce our costs, particularly of nitrogenous fertilizers, substantially and to be fully competitive both in home markets and overseas with producers who have the advantage of local natural gas or oil refinery gas supplies.

You will also have noticed that we are erecting an oil refinery. This is unlike an ordinary refinery in that its main object is not to produce fuel products such as petrol and diesel oil but to provide us with a substantial part of our requirements of the petroleum fractions used as raw materials in the manufacture of the synthesis gas I have already mentioned and of many other chemical products. The fuel products from our refinery will be, from our point of view, byproducts, and they will be taken back by the oil company supplying the crude oil: we are therefore not concerned with the distribution and sale of such products. By having a refinery of our own we are insuring against the possibility that the price of the special oil fractions we need as chemical raw materials might in the future increase to a greater extent than the price of the basic petroleum commodity, crude oil.

'Terylene' in Ulster

The Company's decision to erect a 'Terylene' spinning plant in Northern Ireland will make a modest contribution to the unemployment problems of that area. 'Terylene' is justifying all the confidence which we have shown in this product, and each year it contributes a growing proportion both of the Company's turnover and of its profits. We believe, too, that polypropylene, which we are beginning to manufacture and sell under the trade name of 'Propathene,' has also a great future. It is a plastic material complementary to polythene but is lighter and stiffer, and has a higher melting point.

You will also have noticed from the Report that the Company has taken a 51% interest in the share capital of Richardsons Fertilisers Ltd. and Ulster Fertilisers Ltd., who supply from their factories in Belfast and Londonderry a substantial part of the fertilizer requirements of Northern Ireland. With the improvements in technical efficiency which can be achieved, associated as they are with the introduction of new plant capacity, sales of fertilizers in Northern Ireland can be expanded and a further contribution made to the economy of that country.

So far as our manufacturing interests overseas are concerned it is perhaps a little invidious to single out one or two countries for special attention, but perhaps I might be forgiven if I mentioned the case of India. In our factory at Rishra, near Calcutta, the polythene plant is working well above design capacity, and extensions are being made to the paints and other plants there. All this manufacture is efficient and profitable. I visited the factory in February of this year and found the team there

energetic, enthusiastic and competent; they are all Indian with the exception of the factory manager. Similarly, the explosives plant at Gomia in Bihar, which is working at over 50% above design capacity and which has only two Europeans left, is running smoothly and well. This industrial explosives project has been set up in co-operation with the Government of India, which owns 20% of the ordinary share capital; it is an interesting example of co-operation between a large private company and a Government whose policy is to have a mixed economy with a semi-socialistic pattern. The explosives plant is being extended and will in a year or two supply practically the whole of the industrial explosives requirements of India. There are also plans to produce polyester fibre in India and to develop a site near Bombay for the manufacture of rubber chemicals and other products. On a sadder note, I have to report that our company in India suffered a grievous loss by the sudden death last month of its brilliant Indian chairman, Mr. J. M. Lall. In Mr. Foster, the new chairman, and in the other directors of that company, we have a fine team there to carry on.

Another country in which we have confidence and where plans have been approved for substantial expansion of manufacturing activities is Argentina.

Development at Rotterdam

Coming nearer home, to Europe, I feel that the press reports of what we are doing and propose to do at Rotterdam may inadvertently have led to some misunderstanding about the timetable of these developments. After a most thorough examination we decided that it would be a good long-term policy to establish ourselves as substantial manufacturers of chemicals within the European Economic Community. Holland is well placed both for manufacturing facilities, including raw materials, and for access to markets. We have therefore taken an option on a lease from the port authorities of Rotterdam with the intention of developing this site as opportunity offers in the years to come. As yet there are no cut and dried plans about the manufacturing plants to be erected, but there is every reason to expect that this large site at Rotterdam will develop so that ultimately, which means over a period of a number of years, we shall have a complex of integrated chemical plants working efficiently in the European Economic Community which will be comparable in size to those already operating at Wilton and now in course of construction at Severnside.

Perhaps I should say two more things about this projected manufacture in Rotterdam. We have come to the conclusion that manufacture on this site is likely to prove sound and profitable, whether Britain becomes more closely associated with the European Economic Community or not. Having decided to start manufacture in Holland, it is likely that in the years to come we may also be

manufacturing elsewhere within the European Economic Community. Secondly, we expect the markets for our products to expand and that production in Continental Europe will give us opportunities of adding to our markets and to our total sales; it will not reduce sales from our existing factories in Britain, which we intend to go on developing and expanding as in the past.

Nearly £40 million of capital expenditure was sanctioned during 1960; already in 1961 we have approved the expenditure of a further £45 million. This is some indication of the large developments which are now in hand, although it will be some time before the expenditure on these new projects will be completed.

Buoyant Sales

I have said that in the first half of 1960 our sales were particularly buoyant. So far sales in 1961 are about equal in volume to those in the corresponding period of 1960, but profit margins are likely to be kept down by competition both at home and overseas. Taking everything into account there is no evidence which would justify any modification of the statement made by the Directors when announcing the new capital issue in January of this year that we would hope to maintain on the increased capital the same total dividend as is proposed for the year 1960.

The new capital issue of one share for every £20 of ordinary stock held was a most successful operation, and the Company's capital and reserves have been increased as a consequence by a sum of £34 million.

I cannot let this opportunity pass without some reference to the taxation proposals in the Budget which the Chancellor introduced last month. The reliefs from surtax in respect of earned income have been long overdue, and the starting point for surtax of £2000, which had remained unchanged for 41 years, notwithstanding the fall in the value of money, was perhaps the greatest anomaly of our taxation system. The Chancellor's action in raising the effective starting point for surtax on earned income to £5000 is bold and imaginative. I believe it will go a long way towards solving the problems which arise from the difference between net earned income for business executives in Britain and those in competitive countries such as Germany and the United States. There are a number of ways in which this change in the taxation of the middle range of executives will act as a spur and an encouragement, particularly where good work may mean promotion with a financial margin which is worth while.

I am less happy about other proposals in this Budget. Profits tax, which is payable in addition to Income Tax and is not allowed as a deduction in arriving at the profits to be charged to Income Tax, falls entirely on the profits belonging to ordinary stockholders, and some of us have been campaigning for years for the abolition of this tax on enterprise. In the days of the Labour Government we

were assisted in this struggle by Mr. Selwyn Lloyd himself and can feel disappointed that he has so far fallen from grace now he is in office as to do the very opposite of what he advocated fourteen years ago. He then opposed the introduction of Profits Tax; today his increase of Profits Tax to 15% puts British company taxation up to 53.75%, which is above that in the United States and other countries, and above that which in 1948 he described as fantastic and which he considered would cause the lingering death of private enterprise in this country. Capital is as important for modern industry as labour, yet the reward for saving and investing in private enterprise continues to be singled out for special punishment not meted out to other income.

Another bad feature of this year's Budget is the tax on fuel oil. This tax, coming after Ministerial statements that they would let consumers, and particularly industrial consumers, have an unfettered choice of fuels and would not seek to protect the coal industry by taxing oil, has come as a surprise and a deep disappointment. The tax amounts to about £2 a ton, or 40% of the f.o.b. price of fuel oil. If we look at this tax as a means of raising revenue it seems to me to have no merit whatever. The Chancellor has a choice of raising revenue by taxes on incomes, which can be graduated according to taxpayers' ability; or, if he feels that personal consumption is running at too high a level and should be curbed, he can add to taxes on consumption goods. He has, in fact, chosen to put a heavy tax on production costs. Less than 10% of this tax will fall on private consumers and most of the rest will fall on private industry or the cost of generating power.

Addition to Costs

At a time when British industry is being urged to reduce costs, this direct addition to costs will be a serious blow to the competitive power of substantial sections of British industry, both in its export trade and in the home market, where the competitive power of British industry against foreign imports is just as important as exports. Ministerial statements about the need for exports and reducing costs sound rather insincere when the Government's own deliberate action adds substantially to manufacturing costs. To argue that there are one or two other countries which have imposed a tax of this kind is no answer in this country, where the balance of payments position is critical and action putting up competitive costs seems rather irresponsible.

In spite of these tax changes, some of which will have an adverse effect on costs and competitiveness in export markets, I believe that the Company's strength and technical developments at the present time are such that we can hold our own and make substantial further progress both at home and overseas in the rest of 1961 and in the years to come.

July IN THE GARDEN

THRIVING PLANTS IN A TIDY GARDEN

By PERCY THROWER

FROM now onwards we need plenty of warm sunshine to change the beds and borders in the garden from the current predominance of green to the many bright and varied colours of summer. Now that the plants are well established they are able to stand up to dry weather, and that, with sunshine, greatly increases the amount of flowers we can look forward to. I suppose if gardeners have a grumble at all it is over the amount of lawn mowing they have had to do.

THE lawn mowings we are getting can be of immense value in the garden if we use them as a mulch round the plants, trees and roses to prevent the loss of moisture from the soil. All plants depend to a great extent on moisture for their growth, and the more, within reason, that is available to them, the more growth they will make. All plant foods in the soil must be in soluble form to be of any value to the plants, and the more we can prevent the moisture evaporating from the soil the more plant foods our plants can get.

In the average garden there will not be enough lawn mowings to put round all the plants, but some need it more than others. Trees, shrubs or roses planted during last autumn or spring will not have so much root in the soil to find their moisture as those better established, and a mulch of lawn mowings round them will help them very considerably. It will help established roses, and if the spores of black spot are lurking on the soil it will help to seal them in. Runner beans and sweet peas rely very much on

plenty of available moisture, and mulching will help these, as it will chrysanthemums and dahlias. The grass mowings must never be heaped up round the stems of plants or put too thickly over the surface of the soil, because it will exclude air from the roots, and this can be detrimental. A layer half to one inch spread evenly over the surface of the soil is quite enough for the purpose of reducing evaporation of moisture from the soil.

When the lawn has been mown it gives a fresh, tidy appearance to the garden, and if edging shears are used to trim the grass edges it looks even better. This is a job which, if done regularly, can save the back-aching job of gathering up the grass trimmings; the short blades of grass will quickly dry up and are not unsightly, whereas if the edges are left until the grass is long they must be collected up to keep the beds and borders neat and trim.

A NEAT, well-kept garden can be beautiful without masses of flowers, and from now on it must be our aim to keep the garden neat and tidy. As flowers fade they must be cut off, and in many cases this will also help to get more colour in the garden later on. By cutting off the dead flower spikes of the lupins we shall encourage new growth which will provide some flowers next month; fading roses cut back to a prominent bud will stimulate that bud into growth and produce a flower during the late summer and autumn. Dead flowers must never be left on annuals, otherwise seed pods will form and the plants will cease to flower for very much longer.

The bulk of the alpine or rock plants have now finished flowering, and these, like all other plants in the garden, have this year made an enormous amount of growth. Some are more rampant and spreading than others, and there is always a tendency for the more rampant ones to crowd out the smaller alpines. Aubrieta, rock roses, arabus, alpine phlox and many of the saxifrage can now be trimmed back.

A SHARP knife or secateurs can be used to trim back the growth which has finished flowering for this year. In fact aubrieta and the like can be cut back severely. Cutting back like this will encourage fresh shoots to grow from the base of the plants. They will form a cushion of growth which will be neat and covered in flowers next spring.

The flag iris have been exceptionally good this year, and they too have enjoyed the warm moist weather. I find it necessary to lift and divide these every third or fourth year, otherwise they become overcrowded and flower less freely. The rhizomes can be lifted and divided now and transplanted in prepared positions. If they are to be transplanted in the same position the soil must be dug over and some manure or compost worked in as the digging is done. Fertilizer can be spread over the surface—approximately a handful for each square yard—before planting. When dividing the roots choose only the strongest and healthiest rhizomes and shoots to plant; any that show brown striping on the leaves will be best destroyed, as these may have virus disease.

Catalyst Maker

FOR six hours of his eight-hour day, fifty-year-old shift process worker Walter Wright controls a couple of Manesty pelleting machines producing some 150,000 catalyst pellets. (The other two hours he spends helping fitters to clean and service these machines.) One hundred and fifty thousand catalyst pellets a day! It seems a colossal number, especially when Wright explains to you that catalysts, though in fact their working life varies roughly from three months to three years, are of course in theory virtually indestructible.

You echo "Of course"; and then find yourself asking (but not aloud) "What precisely is a catalyst?" This is an age-old poser that even the experts disagree about. "Catalysts increase the rate of chemical change," or "they lower the activation energies of reactions" is the sort of thing they tell us. In the simplest terms, catalysts make chemical reactions go more quickly and often make substances react which might otherwise have stayed unchanged indefinitely. For example, if someone left the catalyst out of a Billingham ammonia converter, the synthesis gas would go through it quite unchanged.

Catalysts were once defined by analogy as being like parsons, because they join things together and change their lives and then go away unaltered. (To be strictly accurate, they bring about divorces too!) Clitheroe catalysts are used by ICI Divisions in the manufacture of ammonia, methanol, sulphuric acid, isopropanol, acetone, alcohols for the plastics industries, and various other products. They are also sold to associated companies and to other customers for a wide variety of applications, and they are in use in more than twenty different countries.

★ ★ ★

Walter Wright's job is to make these vital catalysts into suitable shapes for packing into converters. Most of them start as powders. Walter's pelleting machine produces $\frac{5}{8}$ in. \times $\frac{5}{8}$ in. rings of one of these. The powder runs down into each of 21 dies in a horizontal table rotating at eight revolutions per minute. It is compressed under a pressure of 90 tons per square inch under the punches and ejected in the form of a ring of compacted material. It is one of about twenty-five different catalysts made at Clitheroe, of which six at a time are in production during Clitheroe's

24-hour working day seven days a week throughout the year.

There are, broadly speaking, three major preliminary stages in the manufacture of a catalyst, and Wright, though at present engaged on superintending the pellet machines, can take his part in all of them. First there are the wet processes, in which raw materials are made into solutions, when precipitation, followed by filtration, takes place. Next there is the drying in gas-fired ovens at temperatures from 100° C. to—in rare cases—400° C. Finally the solids are milled, granulated and sieved before being fed to the pelleting machines.

★ ★ ★

Walter Wright has been working at Clitheroe for twelve years. He was a foreman and boilerman before going to his present job as shift process worker. He is one of 229 workers at Clitheroe.

You may remember the story of the three men who were asked what they were doing: the first said "Breakingstones"; the second: "Earning my living"; the third: "Building a cathedral." Walter Wright belongs to the last class. He knows that his catalysts are the secret of his Company's success: "You know, without little Clitheroe there wouldn't be a Billingham."

A day shift for Wright begins at 6 a.m. and ends at 2 p.m. About once a year he reports back to the training school on the site at Clitheroe where he first learned his job, to spend four days on a refresher course or to study the technique of new machines.

Outside working hours he has interests which reveal the essential conscientiousness and unselfishness of the man. He has twice represented Clitheroe's fire-fighting team—once getting to within one-fifth of a second of victory in the Division competition. He has also five times appeared in the first aid team, last year helping it to finish second in the Division's competition for external factories.

A West Cumberland man by birth, he lives with his wife, son and daughter on the edge of the River Ribble and enjoys tramping over Pendle Hill and the Pennines with his dog Kim: but no more, I think, than he enjoys the feeling that, because of him and his workmates, Billingham is still in full production.



Walter Wright

People and events . . .

Plans for Nylon 6

TO meet the expected increase in demand for nylon from the textile and plastics industries, ICI is to make a further addition to its production capacity for nylon polymer.

The existing Dyestuffs Division plants and one at present under construction are designed for the production of nylon 66 polymer, but this latest extension, which it is estimated will cost approximately £10 million and which will have a capacity of about 15,000 tons per annum, will produce caprolactam, the monomer for nylon 6 polymer, not hitherto produced in Britain.

In connection with this latest extension an agreement has been signed with the Swiss firms Emser Werke AG and Inventa AG whereby ICI has acquired rights for the know-how and patents relating to their new processes for the manufacture of nylon 6 polymer and of caprolactam, on which nylon 6 is based.

Design work is already well advanced, and construction of the new plants will start shortly. Caprolactam will be made initially in a plant to be erected on the Severnside Site. The output will be half as much again as the only other British plant announced—by Courtaulds. As we go to press no details are available of the site or capacity of the nylon 6 plant.

How it Differs

What is the difference between nylon 6 and nylon 66, the type hitherto made in this country? Nylon 6, which has been pioneered largely in Germany, is the product of polymerising the chemical caprolactam. Nylon 66 is the product of polymerising nylon 66 salt, which is made from two intermediates, adipic acid and hexamethylenediamine. Despite the fact that they are made by different processes, the two nylons are very similar in their general structure and properties. For instance, a woman confronted with nylons in nylon 6 and

nylon 66 would find them very similar in appearance. However, the differences though small are important in certain fields, and nylon 6 is considered to be especially suitable for certain plastics applications.

Comment on the AGM

THE Annual General Meeting on 18th May was reported in all but three of the national papers.* *The Times*, in company with the *Daily Mail* and the *Daily Herald*, highlighted the report on ICI's exports. *The Times* remarked: "The most dramatic account yet of the way Britain's overseas markets are changing was given yesterday by Mr. S. P. Chambers in his annual speech as Chairman of ICI. The range of the group's output is so great that it is not unreasonable to take ICI's experience as typical of that facing British industry as a whole today. The ICI export story in brief is that almost the whole of its increase in its sales abroad last year took place in Europe—including Russia and the other eastern European countries." *The Herald* commented that "one of the fascinating facts" reported by Mr. Chambers was that "the mighty ICI now sells more to the Soviet countries than it does to the United States. In fact, ICI's sales to US and the Commonwealth markets seem to be standing still, whereas sales to Russia and other eastern European countries jumped last year by 60%." *The Mail* suggested that "the rise would go on and

**Daily Worker*, *Daily Sketch* and *Daily Mirror*.

that these markets would give a security and resilience in the group's exports as a whole which would be absent if there was too great a concentration on the Commonwealth and America."

The change-over from coal to oil raised comment in the *Guardian*, which carried the headline "ICI Changing Over to Oil—coal no use in new methods," and in the *Herald*, which remarked that "Mr. Chambers has no good news for the British Coal Industry—which is a pity. He reports that ICI is replacing its gas from coke plant with processes which begin from oil. And these processes, he says, are so much more efficient that 'we would adopt them and abandon coal as a raw material even if the coal cost us nothing'."

Birthday Honours

THREE ICI names appeared in last month's Birthday Honours List. **Mr. Ray Middleton**, project officer at Metals Division's Summerfield Research Station at Kidderminster, gets the MBE. **Mr. Hugh McCaughtrie**, also of Summerfield Research Station, and **Mr. George Smith**, who retired from Alkali Division's Buxton Lime Works last February, get the BEM.

Mr. Middleton, project officer in the ballistic and rocket motor design department, has spent all his working life in the aircraft industry. Before joining ICI in 1952 he was with Hobsons, the Wolverhampton aircraft components firm. His interests outside work are motoring and the guitar, which he plays in the Summerfield Band. Mr. McCaughtrie joined ICI at Ardeer in 1935. He moved to Summerfield in 1952, where he is now propellant plant foreman. He is married and has a daughter of 15 and a son of 26, who is an assistant foreman in the Summerfield Central Stores.

Mr. Smith, former Lime Division safety officer, retired in February after 40 years' service. When he was appointed to the job in 1948 the accident frequency rate was 10; by the time he retired it was down to around 0.5. Mr. Smith was one of the founder members of the Institute of Industrial Safety Officers and for some years was chairman of the Manchester Branch, and he was ICI's representative on the British Standards Institute Committee dealing with safety helmets.

Bowling Celebrities

A MEMBER of Plastics Division's Bowling Club, **Mr. J. Potts**, has written to us suggesting two ICI names which might appropriately be added to Denzil Batchelor's list of bowling notabilities in our May issue. They are the late **John Paterson** and **A. F. Gawler**.

Mr. Paterson, who at the time of his death was in charge of Pensions Department at Millbank, was an international bowler of repute. He played seven times for England and captained the team in 1946. In Plastics and Paints Divisions' bowling clubs his name is proudly perpetuated by the John Paterson Memorial Trophy, played for annually by a combined team from the two clubs against a team of internationals.

Coming to the present day, Mr. A. F. Gawler, Plastics Division commercial services director, is a well-known county and Middleton Cup player and is the current treasurer of the English Bowling Association.

Nobel Plasters

IN a laboratory at Ardeer Factory plasterers were resurfacing a wall, but clearly the results were not to their liking. Almost from the moment it had been smoothed into place the finishing coat of plaster began to undergo a change. It lost its whipped-cream consistency and hardened quickly into a dry, powdery mass on which tiny cracks spread in all directions.

For the men working with it this was no new experience. In all their years in the trade they had never known the result to be any different when they came face to face with a dry wall



Mr. Smith

Mr. Middleton

Mr. McCaughtrie

backed with lime and sand. But this time their problem was nearer solution than they knew. For in a neighbouring lab, such is the long arm of coincidence, experiments were going on that were to lead to the development of plaster products that have outstanding promise for the building trade.

Curiously, it was not until the chemists overheard the plasterers discussing their problem that they realised they might have the answer. "Our line of research," recalls **Dr. K. G. Cunningham**, one of the men who started it all, "had in no way been prompted by any requirement of the building trade. But what we learned from the plasterers strongly suggested that the trade might well be interested in our discovery."

Some of the new material in a modified form was mixed and given to the plasterers to use on an adjacent wall. The results they achieved were better in every way.

Details of three special plasters developed from this early experiment have now been released by Nobel Division. Chief advantages are that they are especially effective on surfaces well known to present plastering problems, one plaster does the job of several traditional mixtures, they are premixed (all that needs to be added is the water), and they don't soak up paint undercoat as so many conventional plasters do. They have passed the tests of the Government's Building Research Station with flying colours and have already been satisfactorily used in a number of building projects both inside and outside the Company, among them a new Glasgow hospital and a large local authority housing project.

Endurance Test

IN 1953 **Mr. Bert Lowe** left the world of the orchestra pit to don an ICI uniform and become commissionaire at the South Wales Area Sales Office. He tells the story of his life as a professional violinist in a recent issue of the *Regional Review*.

One of his first engagements was as repetiteur violinist on board one of the Union Castle liners. His duties, he writes, involved playing from the same score as the leader, turning over the pages, and generally freeing his superior to conduct, smile at the prettier ladies,

IN BRIEF

Cheaper Fertilizers. Reductions in all fertilizer prices, representing a saving to British agriculture of £1½ million in 1961-62, were announced last month. They follow those made last year, which were estimated to save the British farmer nearly £1 million on his fertilizer bill for 1960-61.

Modernisation at Darwen. Plastics Division is to go ahead with a further stage in the modernisation of its Darwen factories at a cost of £200,000. Work is already in progress at Orchard Factory, where flat 'Perspex' sheet is made. Now it is intended to start on the modernisation of Britannia Mill. This will enable output of patterned and block 'Perspex' to be increased.

Fund-raising Divers. A sub-aqua diving team from Wilton's swimming section took part in a water show at Redcar on 10th June held to raise funds for the proposed Cheshire Foundation Home for Incurables at Marske.

Praise for Firemen. Praise for the part ICI's fire unit at Stowmarket played in tackling one of Suffolk's biggest fires for years was given in the East Anglian press recently. The fire occurred in a factory adjacent to the Paints Division site, and the ICI firemen were the first to see the threat to the other factory's production shops. The manager of the affected factory said that his firm were extremely grateful to the ICI men for their prompt and willing co-operation at a critical moment.

and exude charm while the continuity of the theme was maintained.

Later he became violinist with a cinema orchestra in the heyday of silent films. This was no sinecure. As film making techniques improved, so more complicated background music was demanded to reflect the full emotional impact of the plot. A feature film, he



recalls, often required excerpts from Beethoven, Bach, Wagner, Verdi and Rossini—all in the space of an hour or so. There was nothing haphazard. The orchestra worked to a synopsis of the story, using cue sheets, and as many as a hundred different bits and pieces would be fitted to a two-hour film.

Some films were endurance tests. One he isn't likely to forget was a John Barrymore film called *The Enemy of Women*, which demanded continuous playing for over two hours from the violins. This, he recalls, was shown three times a day for a fortnight and proved so popular that, to the orchestra's chagrin, it was later brought back for a further three weeks.

His last job before joining ICI was as a member of the orchestra of the New Theatre, Cardiff. Nowadays his violin is a hobby only, and he plays for an amateur chamber music group.

Work Study Honours

Two unique distinctions have been conferred recently on **Mr. R. M. Currie**, head of Central Work Study Department. On 16th June, at a meeting in Heidelberg, attended by Work Study experts from ten countries, he was made first president of the newly formed European Work Study Federation. On 3rd July, at the Livery Hall of the Guildhall, he was invested by Admiral of the Fleet Earl Mountbatten with his badge of office as first president of the Institute of Work Study.

In a short speech accepting the for-

mer office Mr. Currie spoke on the broad aims which they had met together to inaugurate and pursue. Work study, he said, was a vital part of management, intimately concerned in the business of fulfilling the aims of industry—to produce more and more of the goods and services the world needs, with less and less waste of all our resources. They had not gathered together, he said, to consider how the world's riches should be shared: this was still regarded as the exclusive province of the politicians, who had not done particularly well at the job so far.

"We have gathered together—and let us never forget it—to see that in the long run there is nobody in the world without food, without clothing, without housing, and without the graces of life represented by books and music and pictures, by recreation and travel and leisure, to give service to the community for its own sake. At the back of all our efforts to make work more effective," he went on, "must be the conviction that there need be no unemployment in the world as long as a single individual is without the satisfaction of any of his legitimate needs or desires. Any less broad objectives must necessarily diminish us as men."

New Fashion Fabric

"**AMBLA**," a new fashion fabric made by ICI (Hyde), was shown for the first time at the International Plastics Exhibition held at Olympia in London last month. It has the hard-wearing qualities associated with 'Vynide' but looks and feels even more like real leather—the secret is in the pvc coating, which is foamed, making it soft to handle.

Goods in "Ambla" on display at Interplas included ladies' coats and hats, children's wear, handbags and casual shoes. At present "Ambla" is being made only in white, freesia, bone and black (the top-selling colours in the fashion trade for leather goods), but other colours are to be added to the range.

Toolsetter's Award

SIMPLIFICATION in the manufacture of small zirconium cup inserts for a United Kingdom Atomic Energy Authority contract was so essential

that the Sundries Section of the Ammunition and Light Metal Fabrication Department at Witton stopped production while the problem was tackled. Existing methods were expensive both in time and breakages.



Mr. Spiers (left) and Dr. Doyle

Mr. Len Spiers, whose name has featured on more than one occasion before on Metals Division's list of Suggestion Scheme awards, struck on the answer pretty quickly. His solution reduces the manufacturing process by two operations and has won him a

£100 award. Our picture shows him receiving his cheque from **Dr. R. J. Doyle**, general manager of the Ammunition and Metal Department.

Mr. Spiers, a toolsetter, was recently appointed a chargehand. Three years ago he won another substantial sum (£80) for improving the method of assembling cases for clinical thermometers, and he has also received several £3 and £5 awards for other ideas.

Does his inventiveness extend to the home? He says not. His only hobby, if it can be called such, is teaching other people to drive, and he leaves any maintenance work on his car to an expert.

APPOINTMENTS

Some recent appointments in ICI are: **Billingham Division:** Mr. W. B. M. Duncan, Engineering Director; Dr. P. W. Reynolds, Technical Director; Mr. R. S. Wright, Managing Director (Technical) jointly with Mr. K. H. L. Cooper and Mr. W. C. d'Leny. **European Council:** Dr. A. M. McKay, Managing Director; Mr. C. A. C. Petrie, Engineering Manager. **Head Office:** Mr. C. Hunter, Head of Safety Department; Mr. W. H. Tucknott, Buying Manager, Non-ferrous Metals, Central Purchasing Department. **Nobel**

Division: Mr. K. J. Brimley, Assistant Research and Development Manager (in addition to Dr. S. Fordham and Mr. R. C. Payn); Mr. J. de Normann, Research and Development Manager (Chemical Products); Mr. E. Whitworth, Research and Development Manager (Explosive Products). **The Regions:** Mr. J. A. Collier, Agricultural Sales Manager, Northern Region; Mr. J. M. Kelly, Regional Sales Manager (Metals), Midland Region. **Wilton Works:** Mr. J. H. Harvey-Jones, Supply Manager. **ICI (China):** Mr. R. Burrell, Director; Mr. J. Hackney, Chairman; Mr. L. J. A. Porter, Director. **ICI (Pakistan):** Mr. D. G. Harwood, Alternate Director to Mr. G. J. F. Mackay; Mr. G. J. F. Mackay, a Home Director; Mr. A. J. Milne, Sales Director.

RETIREMENTS

Some recent announcements of senior staff retirements are: **Billingham Division:** Mr. P. Mayne, Technical Director (retiring 30th November). **ICI (China):** Mr. C. A. Wright, Chairman (retiring 25th November).

50 YEARS' SERVICE

The following employees have completed 50 years with the Company: **Alkali Division:** Mr. W. Harris, Avenue Works (4th June); Mr. W. Morten, Buxton Lime Works (15th June); Mr. A. L. Sands, Walscote Works (13th May). **Paints Division:** Mr. W. H. Edge, Hyde Works (1st June); Mr. S. Pollitt, Hyde Works (5th May).

PEOPLE

Lord Amory, the former Chancellor of the Exchequer and one of ICI's non-executive directors, is to be the new UK High Commissioner in Canada.

It is announced with regret that **Sir Syed Maratib Ali**, a director of the Khewra Soda Co., died suddenly of a heart attack on 22nd May. Sir Maratib Ali had wide business interests in Pakistan and was one of the original directors of the Alkali and Chemical Corporation of India Ltd. on its formation in 1938.

Mr. P. Whitby (Dyestuffs Division) has been elected to Manchester City Council at the age of 27. He joined the Company from Oxford as an organisation and methods trainee 4 years ago.

A Gaskell-Marsh Works (General Chemicals Division) apprentice, **John Stevens**, was selected to play for the England "under 19" team in the rugby international against France at Wakefield in April.

Kenneth Seaman, an 18-year-old Billingham apprentice, was recently presented with his Queen's Scout badge. He has been a member of the 1st Norton Group since he was eight and is the 19th Scout from the Group to be awarded the badge since the war. The Group scoutmaster is **Mr.**

Norman Huckle (Billingham Work Study Dept.).

Two Billingham 'Perspex' Plant men, **Mr. Bob Lewis** and **Mr. Harry Hallett**, have been elected president and vice-president respectively of the Tees-side branch of the Dunkirk Veterans Association. Mr. Lewis also serves on the executive council of the whole Association.

Peter Woodcock, a 'sandwich' student, has been elected president of Guild of Students for the coming academic year at Birmingham College of Technology. He is an employee at Paints Division's Slough factory.

In the recent Royal Scottish International Motor Rally during Whit Week, **Dr. James Taylor** and his son Dr. R. S. Taylor competed in a 2-4 Mk. 2 Jaguar and obtained the first award in their Classes 4, 5 and 6.

Dr. S. Jenkin Evans, senior medical officer at Wilton, was invested as a Serving Brother of the Order of St. John at an investiture in London held by the Lord Prior of the Order, Lord Wakehurst, on 16th May. Dr. Evans has pioneered first aid training at Wilton and is chairman of the Wilton First Aid Group, which now has the largest single voluntary class in the country. This year some 300 people took the examination.

NEW LOOK AT THE TOP (continued from page 225)

normal run of business and which require preliminary discussion. Other matters for preliminary discussion by executive directors but which do not fall to be brought up to a Chairman's conference are dealt with monthly at a conference of executive directors presided over by one or other of the deputy chairmen.

EDITOR: *What about the conduct of the Board Meetings themselves? Has there been any change in procedure?*

BINGEN: Yes, we now have one Board a month instead of two, and we have revamped the paper which is brought up to these meetings. In general, the papers coming up now consist of the minutes of the various conferences I have outlined; all expenditure proposals if they are beyond the competence of the CPC; monthly sales figures; profit statements and forecasts once a quarter. Then, of course, we sometimes have to consider a dividend as well!

EDITOR: *This seems about as thorough a system as man can devise. But of course no organisation can ensure wisdom. It is the quality of the people who direct that really matters.*

BINGEN: I quite agree. But good organisation can at least help towards wise decisions, just as bad organisation can certainly hinder them. Nor must you forget that the directors devote a lot of their time to ensuring that the right people are in the right jobs and that there is a proper promotional flow throughout the Company.

EDITOR: *How do you set about that very important job?*

BINGEN: We have an Appointments Committee of the Board under the chairmanship of Ron Holroyd. Like the CPC, this committee consists of all executive directors except the Chairman. This committee not only considers

and recommends senior appointments at home and abroad but also goes to great lengths to ensure that the right people are being brought on and given their chance in the Company. We look at possible successors for important posts, make sure that promising people are getting the right kind of experience, and, indeed, have individual reports on people down to what you might think quite a junior level. You would be surprised at the amount of detailed thought which is given to this very important question of personnel.

EDITOR: *This reorganisation has been operating for six months now. Do you think it has proved successful?*

BINGEN: I would say yes. I am not sure that we have been successful in reducing the amount of paper which has to be circulated, but I do think that directors and other senior officials are getting a much more comprehensive view of the Company and its current problems. Indeed, the way papers are now presented should enable the Company to take the right forward-looking decisions in proper time.

EDITOR: *One final question. Do you think the present organisation has come to stay, or will there be further changes in the future?*

BINGEN: It is a pity to keep on tinkering with an organisational structure, but our new organisation is inevitably experimental. I would certainly expect changes over the years, if only because of the growth rate in ICI as a whole and the differing growth rates in varying Divisions. This will throw up problems which will have to be tackled in due course.

NEWS IN PICTURES

Home and Overseas



Commonwealth Technical Training Week. Apprentices from eight ICI Divisions came down to London to attend events concerned with Commonwealth Technical Training Week. One of the highlights was the service held in St. Paul's Cathedral on 1st June. Here, photographed in Southampton Row, are (left to right) Richard Grieve (Dyestuffs), J. A. Roberts (Alkali), Thomas Andrew (Nobel), W. J. Davies (Marston Excelsior), Philip Wootton (Billingham), Peter Wright (Wilton), David Green-smith (Plastics), Frank Layton (Wilton) and Brian Ellis (General Chemicals). Right: Metals Division's new chairman, Mr. St. J. Elstub, explains the Division's exhibit to the Duke of Edinburgh at Birmingham's Careers Exhibition held during the Week

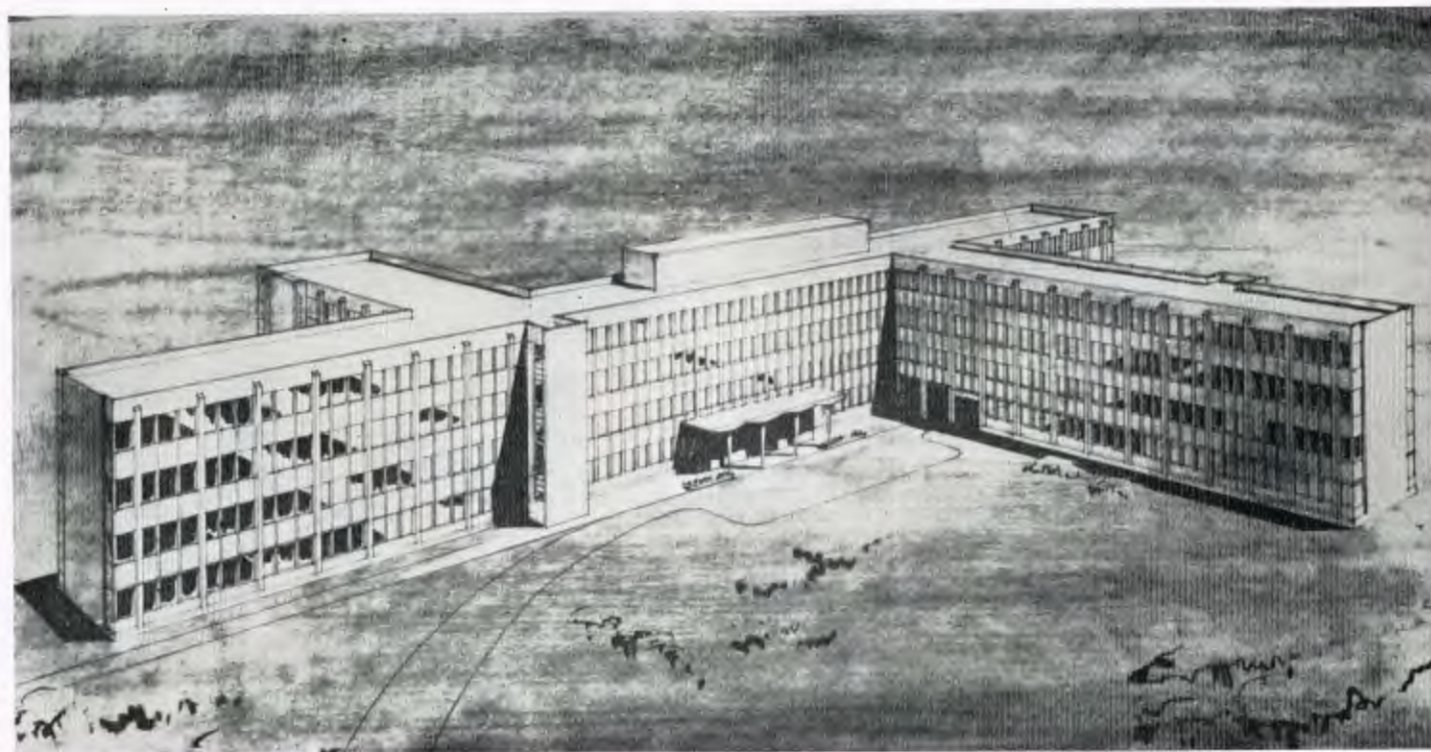


Colours ceremony. Mr. W. E. Durrant (Dyestuffs Division), who is regimental quartermaster sergeant of the Duke of Lancaster's Own Yeomanry, was the bearer of the regiment's 50-year-old guidon when it was trooped for the last time before the Queen on 24th May in Manchester. Below: Earlier, at the rehearsal for the royal parade, another Dyestuffs Division man, Mr. E. B. Withington, stood in for Prince Philip



Gift for spastics. Some of the children attending the Tees-side Spastic Treatment Unit at Middlesbrough, opened by the Princess Royal last February, try out the new bicycles and tricycles presented to them recently through the Wilton Charities Fund. In the centre is a 'Propathene' toddler's trike





New office block. Building is about to start on the new headquarters offices of Nobel Division at Stevenston. Last month a £500,000 contract for the work was placed with the Mitchell Construction Co. The main block of the new four-storey building will be 350 ft. long, and the new Nobel plasters mentioned elsewhere in this issue are to be used in the construction. The decision to move the Division's headquarters to the Ayrshire coast from Glasgow was announced in April last year



'Alkathene' bags on trial. These all-polythene bags are being used for some of Alkali Division's products during packing and handling trials at Wallerscot Works. If these prove promising, the next step will be trial shipments in these packages to export markets. Billingham Division are also packing fertilizers experimentally in polythene bags

National champions. All five members of the Durham men's team, which came top in the final of the British Red Cross Society's National First Aid Competition held in London on 10th June, were Cassel Works (General Chemicals Division) employees. They gained 700 out of a possible 1000 points—45 points ahead of the runners-up, the Norfolk team. *Left to right:* Messrs. Dargue (captain) Miller, Hunter, Johnston and Peare



Lost—one bird's nest. When fitter Jim Murray began maintenance work last month on an ammonia rail tanker which had just arrived at Billingham from Heysham Factory in Lancashire, he made a surprising discovery. In the framework he found a blackbird's nest, and in it were two eggs. There must be a sadly puzzled blackbird at Heysham still wondering how its home and its eggs vanished into thin air



Royal visitor. Sir Brian Robertson (*centre*) and Dr. Richard Beeching welcome the Duke of Edinburgh at the Golden Jubilee Exhibition of the Institution of Locomotive Engineers held at Marylebone Goods Station in May. Dr. Beeching, former ICI technical director, took over from Sir Brian as chairman of the British Transport Commission last month. (*Photo: British Railways*)



First Aid dinner. To mark the success of the Trafford Park Works team in winning the ICI First Aid Trophy this year—the first win ever for a Dyestuffs Division factory—Dr. J. Avery, the Division chairman, entertained the team to dinner at the Queen's Hotel, Manchester. *Left to right:* Messrs. Bragg, Hanson, Hepworth, Beeston, Dr. Avery, Messrs. Ollerhead and Davenport

Masai's thank you. Mr. D. A. B. Garton-Sprenger, general manager of the Magadi Soda Co., receives a spear from headman Maora ole Lolpisia as a token of appreciation for the food supplies and other help the Company gave to the Masai during the recent famine. The presentation took place at a Baraza—a gathering of tribesmen called for some special occasion—at Magadi attended by some 300 Masai



You too, can be a cricketer

Any young player with great determination and merely average ability can be improved 100%; a potential club cricketer can be made into a county player. That is the belief of Alf Gover, former Surrey and England test bowler, whose cricket school—the most famous in England—is described below.

By Denzil Batchelor

SEVENTY years ago hardly anybody believed that cricket could be taught. No one, for instance, ever gave C. B. Fry a lesson. (He liked the sound of bat against ball from the next door garden, looked over the wall, and watched a young man practising batting—and that was as near to instruction in cricket as he ever got in his life.) Today there are more than a dozen indoor cricket schools in England, including those run by about half the first-class counties at which boys of promise can be coached all over the country. All public schools have their coaches. The MCC Group Coaching Schemes have taught the basic skills to thousands of youngsters.

Gover's school is the prototype and the most famous of all. It was founded by the old Surrey and England players, Sandham and Strudwick, in 1928, and Gover himself was one of the first pupils. In 1938, when working as a quantity surveyor, Gover bought Strudwick out, intending to stay for no more than six months; but he found he had a flair for coaching, loved the work, and has been there ever since. (Sandham retired in 1954.)

Gover likes to start with a boy at the age of ten. He believes—and indeed can prove it—that any young player with great determination and merely average ability can be improved a hundred per cent:

a potential club cricketer can be made into a county player.

Among pupils was Alan Moss, who came to him at fifteen: "He was just a slinger. I had to alter his action and everything." Then there were Michael Stewart, who arrived at thirteen; Brian Taylor, the Essex wicketkeeper-batsman, who started at fourteen; Fred Gardner, who was discouraged because he was making only 400 runs a season, did a refresher course, and went back to score over 1900; Derek Shackleton; Jimmy Gray; Michael Willett; and Pakistani stars of the calibre of Hanif Mohammed. ("He came to be taught," Gover remembers, "but I refused to let anyone teach him. I gave him some advice on policy, but not coaching. He went away saying he had learned a lot.") Fazal Mahmood came as a Test player, but learned a good deal about bowling the cutter and the away swinger.

Gover has a staff of eleven in the winter, rather fewer in the summer. Among them is Arthur Wellard, that remarkable Somerset and England all-rounder who hit 820 sixes in his career: seventy-nine in one season. There are also Joe Skelton of Devonshire, the Harrow coach, and David Sydenham of Surrey. Needless to say, patience is the quality Gover looks for above all else when recruiting new members to his staff.

cricketer

Half an hour's individual coaching costs 15s. an hour. Clubs pay 16s. for an hour's practice under the supervision of one of the staff; actual coaching costs them 30s. for the period.

Alfred Richard Gover, broadcaster and *Sunday Pictorial* columnist, is 53 but looks as if he might well be in his earlier forties. He first played for Surrey in 1928 and retired in 1947. I cannot think of any modern fast bowler except Lindwall who remained in the first-class game over so long a period. Gover played for England four times, and here again it is remarkable that his first and last appearances for his country should be separated by ten years.



Alf Gover coaching an 11-year-old at his cricket school in south-west London



Even test cricketers come to Alf Gover for refresher courses or to cure faults. Here Geoff Griffin, the South African fast bowler whose action led him to be no-balled on several occasions, is seen having his arm position checked by Alf Gover

He is one of a couple of dozen cricketers who in the past century have taken four wickets with consecutive balls (the first man ever to do so was J. Wells, father of H.G.). In his twenty years in the game Gover took over 100 wickets in six seasons, and over 200 twice. In all he took 1551 wickets at an average of 23.65.

As a batsman he was not encouraged by Surrey—fast bowlers weren't. But in Birmingham League cricket he was good enough to open the innings. Curious to relate, it is his coaching of young players in the basic technique of batsmanship that impresses you most when you watch him at work in his indoor school at Wandsworth. One reason for this is to be found in the opening two sentences of his book, *How I Teach Better Cricket*. "When I am coaching a player I preach the sermon of attack, whether it be to a batsman, bowler, wicketkeeper or fielder. Aggression always pays in the end."

Now this is interesting, because Ronnie Aird, Secretary of MCC, once said to me: "Coaching of preparatory schoolboys can be fatal. The finished

product is liable to make all the correct strokes without putting any beef into them. Result—no score. But the boy who has an eye and a feeling for ball games has a good slog (generally round to leg)—and scores." Gover—honorary adviser on the instructional film for MCC's coaching scheme—is shrewdly aware of this danger. He teaches boys to hit as hard as they can when playing attacking strokes.

At the end of half an hour's coaching, he says to the pupil: "Three more balls—and you've got to score ten to beat me." This is a psychological masterstroke. After the first three lessons, the small boy at the wicket, you will observe, forgets everything he has been taught in the frenzy of the duel—and loses the battle. After the fourth lesson he remembers Gover's counsel, plays the attacking strokes he has been taught—and wins.

Another point not overlooked by experienced coaches: a fair proportion of *bad* balls are bowled to young cricketers, the sort of ball they'll get in games at school.

Looking back over the past 23 years, Gover remembers Colin Cowdrey as the young pupil who most quickly repaid the care that had been lavished on his cricketing education. Cowdrey came to him at twelve; and, as he says in his recent book, *Cricket Today*: "It was here that I came to know better the *technique* of batting." Gover was sufficiently impressed with the youngster to write to the Tonbridge coach, Ewart Astill, and as a result Cowdrey at thirteen played against Clifton at Lord's, taking 8 wickets for 117 in the match and scoring 75 and 44, in the immortal phrase of an anonymous cricket writer "looking like a great professional batsman seen through the wrong end of a telescope." With Cowdrey there wasn't much to teach: encouragement was the important thing.

But it was a different matter with R. S. Divecha. He came for coaching in 1949, when he was just above average as a fast-medium inswinging bowler. Gover discovered that he was swinging his right leg out towards the on side on delivery, stopped him doing this, and so much improved his length and direction that within a few seasons Divecha was taking wickets for Oxford and India.

Gover has always known that there is more to learn in cricket than the basic techniques. It fell to him to spend his working life trying to conjure devil out of the ideal batsman's wicket at the Oval. In his early days the Surrey crowd thought his efforts—particularly his long, disjointed run—good for a laugh. (I think it was Robertson-Glasgow who described his run as resembling that of an angry passenger missing a bus.) Perhaps subconsciously the Surrey spectators resented him for not being Bill Hitch: they were used to a bull and found it difficult to reconcile themselves to a racehorse. This was trying for a fast bowler, and the attitude of the Surrey slips in those pre-Surridge days made things more unendurable still. They cheerfully dropped catches which had been schemed for and toiled for during exhausting overs. One of them, having a drink with Gover after the day's play, observed: "Well, I must be off. Got a train to catch." "I hope you'll have better luck with that than with your other efforts today" was the retort courteous.

So at the highest level Gover, remembering his own youth, will try to condition a great player into not exhausting himself by unnecessarily squandered nervous energy. I remember Freddie Trueman telling me how Gover had gently urged him to conserve his strength by—to put it vulgarly—"not blowing his top." "All very well for you to talk," snorted Fiery Freddie, "but you come from Eton and Oxford. I happen to come from the pits." He took a lot of convincing that this giant aristocrat with the silvery voice that charms television audiences had learned to bowl in back streets and the recreation grounds of Wimbledon.

What about Geoff Griffin, Gover's most famous pupil in recent years? Well, Gover's view is that, while Griffin lost two yards in pace in the process, he succeeded in straightening his arm and legitimising his action when he came to him for corrective treatment. I know one Test Match umpire who agrees with him, at that.

Two Stars from the Gover School



Colin Cowdrey
KENT and ENGLAND



Alan Moss
MIDDLESEX and ENGLAND

OUR GIPSY CARAVAN

By W. S. Bristowe

Gipsy caravans are a rare link with the past, since gipsies usually burn a caravan when its owner dies. But occasionally they can be found, surprising one by the snug comfort of the interior, often heated by a small range. A tall man can stand up inside.

GIPSIES and gipsy caravans are to me one of the mysteries and beauties of the English countryside. Those who have tried to study their origins have gained little reliable information from the gipsies themselves, but a study of their Romani language leaves no reasonable doubt that India was their starting point and that they were not Egyptians, as the name gipsy we have given them implies.

It seems unlikely that these wandering people arrived in western Europe in large numbers until the beginning of the fifteenth century, or Britain until about a century later—say about 500 years ago.

And what of their gay caravans? Nowadays four main types can be recognised, but it may have been Dickens who first christened them "caravans" in *The Old Curiosity Shop* in 1840, as the Romanis themselves always refer to their "wagons," or sometimes to their "vans." There are the Reading wagons with straight sides and the wheels outside the body, the Leeds wagons with a bow top, the Ledge wagons with the wheels under the body, and the Burton or showman's wagons with straight sides, wheels under the body, and much panelling and carving.

Perhaps the bow-topped Leeds wagon resembles most closely the original form of wagon, because they are not dissimilar in shape to the palm-covered wagons of India, in which only the low wooden sides

are ever decorated. The fully painted gipsy caravan is not thought to have graced our countryside until some time in the nineteenth century.

The interior design has become fairly standardised, with a shelf, pulling out into a double bed, across the end and a cupboard beneath where the young children can sleep. In summer the gipsies usually sleep in a tent or underneath the caravan. Those who can afford luxuries like to have feather beds, good linen often decorated with lace, patchwork quilts, and stoves.

Ornate mirrors, gaily painted woodwork, brass candlesticks, carpets, upholstered locker seats and a glass-fronted bow corner cupboard displaying good china all add to the homeliness of a well-to-do gipsy. They take particular pride in their china, and this may have arisen from their acting as carriers of Staffordshire china to South Wales and elsewhere in the old days.

It has been the common custom for gipsies to burn a caravan when its owner dies, and as none are now being built with the skilled craftsmanship of past generations the time is approaching when caravans may become museum pieces. Accordingly my family and I rallied to restore to its pristine glory a fine but rotting Burton wagon which we discovered locally. Every weekend for several months was devoted to this cause, and no guest was spared participation!



The author's gipsy caravan, after renovation, as it stands in the garden of his Kentish home

While the roof and rotten planks were being restored by a local coach-builder, and before he stripped and primed the woodwork, we scraped away some of the faded red, yellow, blue and green paint with the object of discovering and imitating the original colours. Beneath more than half a century of paint accretions we discovered that all the carvings and main decorations had originally been decorated with gold leaf. Gold leaf it therefore had to be again, despite expense, time, and the need to learn the special craft with the help of expert advisers.

Fortunately our friendly coach-builder allowed the caravan to remain in his covered shed until we had finished this lengthy job, because it is a delicate

operation which can be spoiled by wind and rain until the goldsize has hardened.

The paintwork also provided its difficulties, and expert instruction from a signwriter had to be sought before daring to attempt the delicate lining and patterning which some parts of the caravan demanded. Now the job is finished we are hoping that the high reputation of 'Dulux' coach finishes will prove to be justified, as none of us wants to repeat this job too often!

At present the caravan rests as a splendid ornament in our garden in Kent. Here visitors and their children can be offered a spare bed, but some day we dream of a horse to draw us at a leisurely pace along Kentish lanes.

MAP & SECTIONS of the Railways OF GREAT BRITAIN.

Dedicated by permission
TO JAMES WALKER F.R.S. L. & F.

President of the Institution of Civil Engineers

By GEORGE B. BRADSHAW.

6

BIRMINGHAM AND DERBY JUNCTION RAILWAY.

| Names of Localities where a change of gradient takes place. | DISTANCES. | | | LEVELS. | | GRADIENTS. | | Under Datum |
|--|-------------|-------------|--------------|-------------|-------------|-------------|-------|-------------|
| | Total | | Intermediate | Rise | Fall | per Mile | Ratio | |
| | <i>mts.</i> | <i>chs.</i> | <i>ths.</i> | <i>feet</i> | <i>feet</i> | <i>feet</i> | | <i>feet</i> |
| Commencing at its junction with the London and Birmingham Railway. | 0 | 17 | 0 | 0 | 17 | 0 | | 00·00 |
| | 1 | 53 | 0 | 1 | 36 | 0 | 21·75 | 15·00 |
| | 3 | 63½ | 0 | 2 | 10½ | 0 | 32·42 | 11·40 |
| | 4 | 65 | 0 | 1 | 1½ | 0 | 11·62 | 2·68 |
| | 5 | 68 | 0 | 1 | 3 | 0 | 2·78 | 19·47 |
| | 7 | 56 | 0 | 1 | 68 | 0 | 8·31 | 8·69 |
| | 8 | 52½ | 0 | 0 | 76½ | 0 | 3·71 | 15·56 |
| | 8 | 71½ | 0 | 0 | 19 | 0 | ·59 | 1·68 |
| | 0 | 19½ | 0 | 0 | 28 | 0 | ... | 1700 |
| | | | | | | | 467 | 64·68 |

BRADSHAW'S



TIME TABLE

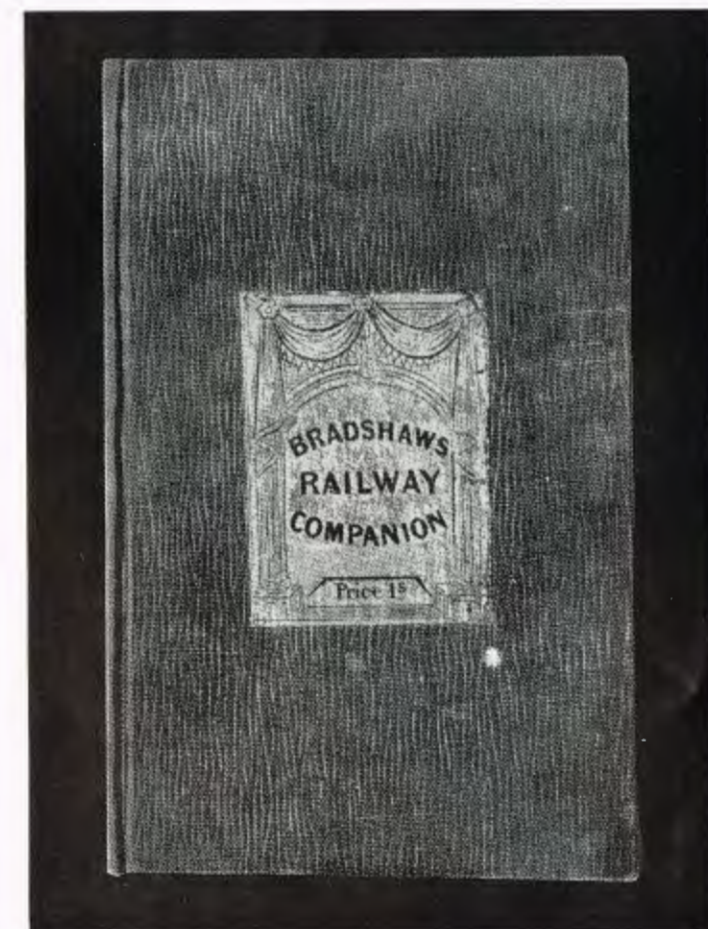
by A. R. Dymant

Illustrated
from an 1839 Bradshaw lent
by Mr. Victor Martin
and portrait of Bradshaw
supplied by Henry Blacklock & Co.

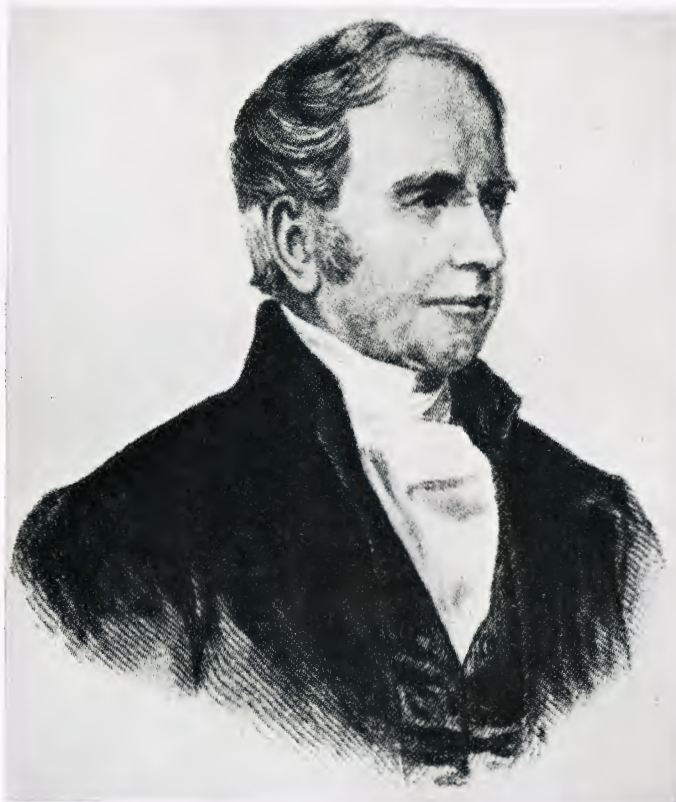
ON 1st May the last of the long line of Bradshaws, continuously published for 120 years, appeared on the bookstalls. After 11th June Bradshaw's timetables were no longer valid for British Railways, and Britain suddenly seemed emptier for the demise of an institution. What is it that made Bradshaw's name so famous, his book almost as indispensable as the Bible?

At a time when trains ran at intervals of two, three or four hours, when a train enquiry meant not a mere telephone call but possibly turning out a horse and gig to consult the Company's time-bills at the nearest station or coach office, how useful must have been the publications of Mr. Bradshaw. Most trains carried first and second class passengers, some carried first only; and the unfortunate third class traveller was confined to one or two slow trains a day run at inconvenient times. Even in 1855 only one train carrying third class passengers ran between York and Newcastle each day, starting at 6 o'clock in the morning and occupying over four hours on the way.

There was no such thing as just catching a train, for on arrival at a terminus one had to ascertain if a seat was available, give to the station clerk sufficient information to enable him to write a ticket and counterfoil which had to bear the name of the passenger and other particulars, and then to take a seat in the appropriate waiting room until called upon by the station constables to file into the train shed to take one's seat. Passengers were required to observe a strict order of priority, unaccompanied ladies having preference over all. The layout of companies' time-bills varied from railway to railway, and most were reluctant to give other than departure times from the terminus. Bradshaw suffered some opposition on this account, as the railway companies felt that publication of arrival and stopping times placed upon them the obligation of punctuality. This difficulty overcome, he was



Bradshaw's 1839 Railway Companion—actual size. This is the earliest known Bradshaw in existence. OPPOSITE: Published simultaneously were maps and a schedule of gradients



George Bradshaw, 1801-1853. Bradshaw married Martha Darbyshire of Stretton in 1839, and the two sons of the marriage went into the business. On a visit to Oslo in September 1853 he caught Asiatic cholera and died within a few hours of contracting the disease. He is buried in Oslo cemetery beneath a red obelisk, which is still cared for by the local authorities



Railway travel in 1884, when Bradshaw was everyman's guide—a contemporary "Punch" cartoon

able to produce timetables giving exact information about every train running in the British Isles, *under one cover*.

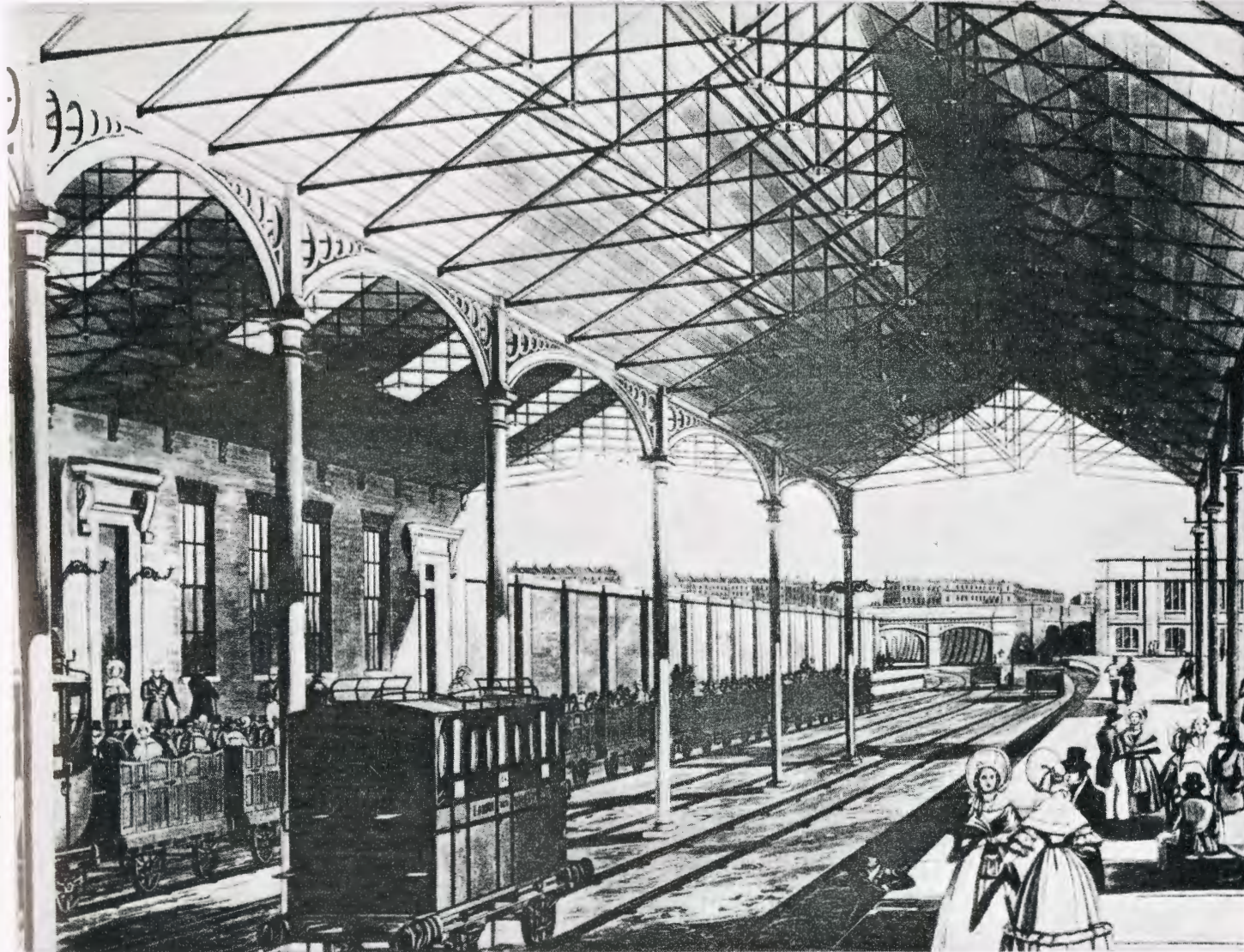
George Bradshaw was born at Pendleton, Lancashire, on 29th July 1801. On leaving school at the age of 14 he was apprenticed to a Manchester engraver. In 1820 the family removed to Belfast, where George attempted to establish himself as an engraver. This venture failed, and after a year or so he returned to Manchester and set himself up in the business that became known as Henry Blacklock & Co. Ltd. He specialised in the engraving of maps and in 1830 produced an important work dedicated to the great road and canal builder Thomas Telford, entitled *Map of Canals, Navigable Rivers, Rail Roads, etc., in the Midland Counties of England, from actual survey*. Other similar maps covering other parts of the country appeared from time to time, and his first railway timetable is thought to have come out in 1838, although there is no 1838 copy still in existence as far as I know. In 1839 the business moved to Brown Street, Manchester, where, in addition to the timetables and maps, it published guides to the territory covered by various railways, a *Handbook to the Manufacturing Districts of Great Britain* and, in the year of the Great Exhibition, *Bradshaw's Guide through London and its Environs*.

As a young man George Bradshaw joined the Society of Friends and became interested in the charitable activities of the sect, especially in the efforts to promote world peace. He undertook the arrangements for the transportation and accommodation of the delegates at a peace conference in Brussels in 1848 and, in the following year, for a similar event in Paris. He played a leading part in like demonstrations later in London and in Manchester. As a Quaker he objected to the use of the names of heathen deities in the calendar. Consequently his publications were headed by ordinal numbers to present the months, with their pagan names confined to brackets.

In an issue of *Tit-Bits* in 1883, Kay, who became the Guide's first editor, wrote: "It was in the middle of 1838 when Mr. Bradshaw handed me one of the Liverpool and Manchester passenger time-bills to condense into a form and size suitable for the waistcoat pocket. The information thus prepared was put into a stiff cover, accompanied by a map of Great Britain, and labelled *Bradshaw's Railway Timetable*. The idea was suggested in order to create a sale for a large number of maps of England and Wales which he had in stock, lying idle." What a curious origin for a publication which in course of time became, after the Bible, the most consulted book in this country!

Other editions of the Timetable appeared, and the name was changed to *Bradshaw's Railway Companion*. It contained twenty pages of railway information and twelve pages of maps, and it cost one shilling. These issues were of pocket size, 3 in. by 4½ in., enclosed in a stiff cloth cover. The pages were printed on one side of the paper only, each sheet being the size of two pages. They were then pasted back to back, the first and last pages being fixed to the covers. A purchaser could thus paste into his book the loose sheets published monthly and keep it up to date.

As the railways grew, the timetables expanded and Bradshaw became a national institution. Punch delighted in the Guide's supposed non-intelligibility; and references were frequently made to it in the annual Lyceum pantomimes. In 1848 there appeared even a comic Bradshaw, a brochure by one Angus B. Reach. But the simplicity of Bradshaw's tabulated system was superior to all others; it was imitated by the railway companies themselves and became universal.



Euston Railway Station in 1839

ADDRESS.

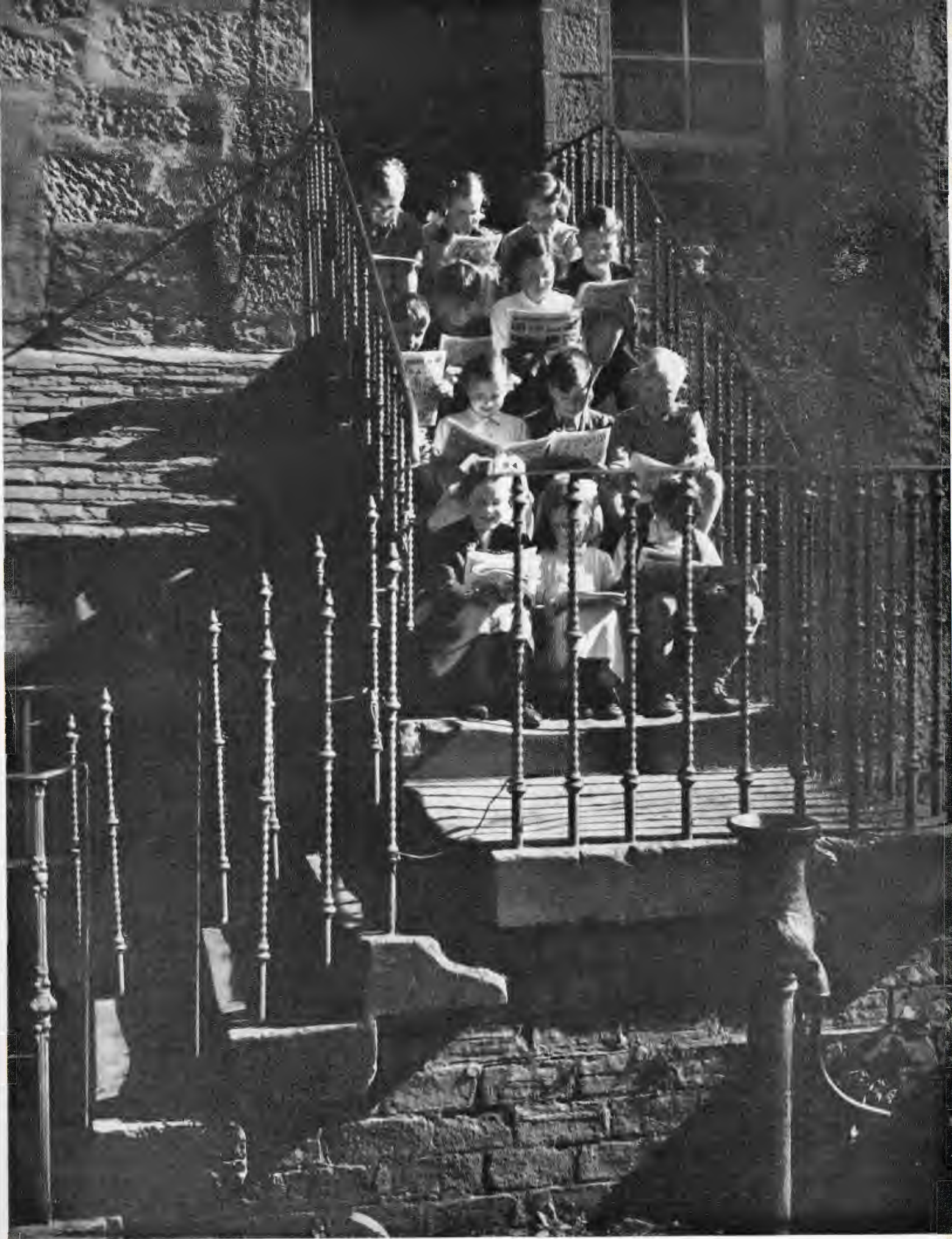
THIS Book is published by the assistance of the several Railway Companies, on which account the information it contains may be depended upon as being correct and authentic. The necessity of such a work is so obvious as to need no apology; and the merits of it can be best ascertained by a reference to the execution both as regards the style and correctness of the Maps and Plans with which it is illustrated.

The next edition of this work will be published on the 1st of 1st Mo. 1840; and succeeding Editions will appear every three months, with such alterations as have been made in the interval.

| Distance from London. | LONDON TO BIRMINGHAM. | | | | | | | | | | FARES. | | | |
|-----------------------|-----------------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------------|---------------------|---------------------|-----------------------|
| | STATIONS. | Mixed. 6 a.m. | Mixed. 8 a.m. | First. 8 a.m. | Mixed. 11 a.m. | First. 11 a.m. | Mixed. 2 p.m. | First. 2 p.m. | Mixed. 4 p.m. | First. 4 p.m. | 1st class. 1st day. | 2nd class. 1st day. | 3rd class. 1st day. | 1st class. 1st night. |
| Miles | LONDON | 6 0 | 8 0 | 8 45 | 9 30 | 11 0 | 1 0 | 2 0 | 5 0 | 6 0 | 3 6 | 3 0 | 2 6 | 2 0 |
| 11½ | HARROW | .. | 8 30 | .. | .. | 11 45 | 1 45 | 2 30 | 5 45 | 6 30 | .. | 4 6 | 4 0 | 3 0 |
| 17½ | WATFORD | 6 45 | 8 50 | .. | .. | 12 15 | 2 00 | 2 50 | 6 00 | 6 45 | 7 0 | 6 6 | 6 0 | 5 0 |
| 24½ | BOXMOOR | .. | 9 10 | .. | .. | 12 35 | 2 20 | 3 10 | 6 20 | 7 05 | .. | 7 6 | 7 0 | 6 0 |
| 28½ | B. HAMPSHIRE | .. | 9 20 | 10 5 | .. | 12 45 | 2 30 | 3 20 | 6 30 | 7 15 | .. | 8 0 | 7 6 | 6 6 |
| 31½ | TRING | 7 25 | 9 35 | 10 48 | 12 25 | 2 25 | 3 35 | 4 25 | 6 40 | 7 25 | 9 50 | 8 6 | 8 0 | 7 0 |
| 41 | LEIGHTON | 7 50 | 10 0 | .. | 12 50 | 2 50 | 4 0 | 4 50 | 7 10 | 8 0 | 12 0 | 11 0 | 10 0 | 9 0 |
| 52½ | BLECHLEY | .. | 10 15 | .. | .. | .. | 4 15 | 5 05 | 7 25 | 8 15 | 13 0 | 12 0 | 11 0 | 10 0 |
| 59½ | WOLVERTON | 8 15 | 10 30 | 11 0 | 11 41 | 1 15 | 3 15 | 4 30 | 7 35 | 8 30 | 10 54 | 15 6 | 14 0 | 13 0 |
| 63½ | ROBE | .. | 10 55 | .. | .. | 1 15 | 4 05 | 5 20 | 7 40 | .. | 17 6 | 16 0 | 15 0 | 14 0 |
| 69½ | BLISWORTH | 8 50 | 11 5 | .. | .. | 1 50 | 3 50 | 5 5 | 7 50 | .. | 18 6 | 17 0 | 16 0 | 15 0 |
| 69½ | WEEPON | 9 0 | 11 25 | 11 50 | 12 39 | 2 5 | 4 5 | 5 25 | 8 5 | .. | 11 50 | 20 6 | 18 6 | 17 6 |
| 75½ | CRICK | .. | 11 45 | .. | .. | .. | 5 45 | 6 5 | .. | .. | .. | 22 0 | 20 0 | 19 0 |
| 89½ | RUGBY | 9 40 | 12 6 | .. | .. | 2 40 | 4 40 | 6 5 | 8 40 | .. | 21 6 | 22 6 | 21 6 | 20 6 |
| 89½ | BRANDON | .. | 12 20 | .. | .. | .. | 6 20 | 7 35 | .. | .. | 26 0 | 24 0 | 23 0 | 22 0 |
| 94 | COVENTRY | 10 10 | 12 35 | 12 50 | 1 36 | 3 10 | 5 10 | 6 35 | 9 10 | .. | 1 0 | 27 6 | 25 0 | 24 0 |
| 100½ | HAMPTON | 10 35 | 1 0 | 1 15 | .. | .. | 7 0 | 8 15 | .. | .. | 29 6 | 27 0 | 26 0 | 25 0 |
| 112½ | BIRMINGHAM | 11 30 | 2 0 | 2 15 | 2 30 | 4 30 | 6 30 | 8 0 | 10 30 | .. | 2 0 | 32 6 | 30 0 | 29 0 |

There is a Mixed Train from Aylesbury to London at 11 a.m., and one from London to Aylesbury at 3 p.m.
SUNDAY TRAINS.—Times of Departure, Mixed 8 a.m., Mail 9½ a.m., Mixed to Wolverton 6 p.m., Mail 8½ p.m.
Children under Ten Years of age, Half-price. Infants in arms, unable to walk, free of charge.—Soldiers en route are charged under a special agreement.—Dogs are charged for any distance not exceeding 30 miles, 1s.; 55 miles, 2s.; 85 miles 3s.; and the whole distance, 4s. No dogs allowed to be taken inside the Carriages.
Carriages and Horses should be at the Stations a quarter of an hour before the time of departure, and they cannot be forwarded by any train unless there, at the least, five minutes before its time of departure, which time is punctually observed, and after the doors are closed no Passengers can be admitted.
To guard against accident and delay, it is especially requested that Passengers will not leave their seats at any of the Stations except Wolverton (half way), where ten minutes are allowed for refreshment.
A Passenger may claim the seat corresponding to the number on his Ticket, and when not numbered he may take any seat not previously occupied.—No Gratuity, under any circumstances, is allowed to be taken by any Servant of the Company.
Ten minutes are allowed at the Wolverton Central Station, where a female is in attendance, where refreshments may be obtained.
The Trains marked with an asterisk (*) are in conjunction with those of the Grand Junction Railway; sufficient time being allowed at the Birmingham Station, where refreshments are provided, and waiting rooms, with female attendants.

The "address" or introduction to the 1839 Bradshaw, and the London to Birmingham timetable in the same edition



"School Break"

Photo by R. G. Cottam (General Chemicals Division)